

THE JOURNAL

OF THE

ROYAL UNITED SERVICE INSTITUTION

VOL. L.

JUNE, 1906.

No. 340.

[Authors alone are responsible for the contents of their respective Papers.]

SECRETARY'S NOTES.

1. The following officers joined the Institution during the month of May :—

Naval Instructor J. White, R.N.
Lieutenant C. E. Hunt, Indian Army.
Captain G. S. Clarke, Indian Army.
Lieut.-Colonel W. R. Ludlow, 1st V.B. Royal Warwickshire Regiment.
Major G. P. Du Plat Taylor, Grenadier Guards.
Lieutenant R. N. Grenfell, Buckinghamshire I.Y.
Commander J. D. Edwards, R.N.
Lieutenant H. J. T. Grey, R.N.R.
Surgeon-General W. Donovan, C.B., A.M.S.
Lieutenant H. H. Berners, Irish Guards.
Captain H. C. Bickford, 6th Dragoon Guards.
Captain A. Courage, 15th Hussars.
Captain A. S. Holme, R.E.
Lieutenant G. A. M. Docker, Royal Fusiliers.
Rear-Admiral F. G. Kirby.
Lieut.-Colonel C. G. W. Lowdell, late I.M.S.
Lieutenant H. C. Malet, 8th Hussars.

(No officer of the Militia joined the Institution during the month.)

2. The Reception takes place on the evening of Wednesday, 27th June. There are still some tickets available, which will be allotted in the order of application.

3. The Council have decided that after the present year all copies actually sent in for competition for Prize Essays shall become the property of the Institution absolutely, and that the copyright of all the Essays published in the JOURNAL shall remain the property of the Institution.

4. A Lecture will be delivered on Friday, 6th July, at 3 p.m., by Brigadier-General M. F. Rimington, C.B., on "The Cavalry Spirit under Napoleon." The Chair will be taken by Major-General R. S. S. Baden-Powell, C.B., the Inspector of Cavalry. As this will be the "off" day of the Inter-Regimental Polo Tournament, the Inspector-General hopes that there will be a good attendance of cavalry officers.

The Lecture which was to have been delivered by Major-General Sir A. B. Tulloch, K.C.B., on the "Argentine Republic and its Neighbours," has been postponed to the Autumn Session.

5. The following additions have been made to the Museum :—

a. Officer's Dress Sabretasche, Royal Marine Artillery; discontinued in 1901. *Given by Lieut.-Colonel J. H. Bor, C.M.G. R.M.A., A.D.C.*

b. An Oxydised Silver Vase, presented by the citizens of Victoria, British Columbia, to the officers, non-commissioned officers, and men of the Imperial Troops at Esquimalt on the occasion of their departure from Canada in May, 1906.

Deposited by Lieut.-Colonel English and the Officers and Men of the Garrison at Victoria, B.C.

c. The Imperial Ottoman Order of the Crescent, awarded to Lieut.-General Sir John Moore, K.B., for his services in Egypt in 1801. *Lent by Miss Carrick Moore.*

d. Four Prints of the Battle of the Nile, dated 1799, showing various phases of the battle.

Given by Colonel G. S. Maxwell, 5th Battalion Rifle Brigade.

6. A collection of Portraits of past Commissioners of the Duke of York's Royal Military School is now being formed at the School, and the following portraits are required to make the collection complete :—

General Sir Richard Green, Bart., G.C.B., 1805.

General Sir H. H. Burrard, Bart., 1809.

Major-General John Brown, 1812.

General Sir R. Darling, G.C.B., 1813.

General the Earl of Rosslyn, G.C.B., 1816.

General Sir W. Clinton, G.C.B., 1826.

Lieut.-General Sir F. Gardiner, 1831.

Lieut.-General Sir R. Jackson, K.C.B., 1836.

Right Honble. L. Sullivan, 1852.

The Institution being unable to assist in supplying portraits of the above-mentioned officers, it is hoped that members in possession of any of them will allow them to be reproduced for presentation to the School.

7. The Secretary wishes to call attention to the fact that many communications relative to change of address have recently been received unsigned, and consequently cannot be dealt with.

MILITARY HYGIENE ON ACTIVE SERVICE.

By Major T. H. J. C. GOODWIN, D.S.O., R.A.M.C.

Thursday, 18th January, 1906, at 3 p.m.

Surgeon-General A. KEOGH, C.B., M.D. (Director-General,
Army Medical Service), in the Chair.

WHILE fully appreciating the honour of reading a paper at this Institution, I confess that it is with feelings of hesitation that I attempt to deal effectively with a subject of such extent and importance.

The range covered by this branch of science is so great that I fear it is quite impossible for me to do more than briefly describe the origin and causation of those diseases which affect our armies on active service, and to then review shortly those measures which will, I hope, prove effectual in the future in preventing those epidemics of disease which have been such a prominent and lamentable feature of our campaigns in the past.

As to the importance of this subject:—Is this thoroughly realised? It certainly has not been so in the past, and the health of our Army, and, consequently, its fighting efficiency, has suffered terribly in consequence.

There can be no possible doubt but that the importance of this subject should be recognised, not only by medical officers like myself, but also by all branches of the Army, for there is abundant evidence to show that the future success of our Army in the field must, and will, to an enormous extent, depend upon the efficiency with which measures for the prevention of disease are carried out.

There is, I think, a general idea that the losses on active service are due to a certain number of officers and men being killed and wounded.

This impression is, to a very great extent, fallacious.

On recent campaigns, the proportion of our losses from wounds, as compared with our losses from preventible disease—I lay stress on the word "preventible"—has been very small indeed.

Take as an example, one of the most fatal diseases on active service: enteric fever.

During the recent war in South Africa there were over 41,000 cases of enteric fever.

Quite apart from the terrible loss of health and life which this disease involved, the cost to the State of invaliding and replacing these men amounted, I believe, to nearly four millions sterling, and this is taking into consideration the case of one disease alone.

As a contrast to this I may mention that the casualties sustained by General Oku's Army in Manchuria, from 6th May to 19th December, 1904, were 26,207 killed and wounded, while, during the same period, there were only 193 cases of enteric fever.

This is, as the *British Medical Journal* (4th February, 1905), observes, "a very remarkable record, affording a striking proof of the efficiency of the precautions recommended by the Japanese Medical Department, and accepted by the commanders in the field for the protection of the men."

During the whole of the recent war, Japan lost 57,000 from wounds, and 15,000 from sickness, the deaths from sickness being less than one-fourth the total loss, a proportion without parallel in the records of war.

In the South African War there were, in round numbers, 400,000 admissions to hospital for disease, and 18,000 for wounds, so that, for every man admitted to hospital wounded, there were 22 admissions for sickness.

Laying aside all sentimental considerations as to loss of health and life, and looking at the matter from a purely practical standpoint—I presume that the main object in warfare is to win battles, and to win them as speedily as possible. Other things being equal, I presume that the side, which has the greatest number of effective fighting men, will win the day.

When we think of the numbers I have just quoted, and realise that the fighting value of 400,000 men was lost to the British Army at one time or other during the recent war, we may appreciate the effect which disease has on the probable outcome of a struggle between two nations.

I imagine that nothing can be more disheartening for an officer commanding any unit in the field than to see his men falling out in increasing numbers every day, and to see men, who should be in the fighting line, drifting away to the field hospitals, where they are lost to him and to the Army as far as their fighting value is concerned.

When such an officer realises that practically all this loss from sickness might have been prevented, the bitter fact that the force under his command has been decimated, and rendered practically useless from disease, will be rendered more bitter still.

Now with whom does the responsibility for the prevention of disease lie?

I think that there is a general idea that it lies, solely and entirely, with the medical officers.

While fully recognising that it is the duty of medical officers to make recommendations, and to do all in their power to ensure that every possible measure for the prevention of disease is carried out, I would point out that, unless regimental and staff officers are in sympathy with such recommendations, and unless both they, and also the non-commissioned officers and men under them, understand the reason of the preventive measures, recognise their importance, and endeavour to efficiently and intelligently carry them out, it is extremely improbable that a successful result will be obtained.

When discussing this matter with combatant officers, I have often been told: "Well, after all, my duty is to fight, and to teach my men how to do so; questions regarding their health, and the prevention of disease, are your business."

I think that this is entirely a wrong standpoint from which to look at the matter; fighting is most certainly the primary duty of the combatant officer, but I maintain that it is also a most important part of his duty to maintain the physical efficiency, and, concurrently,

the fighting capability, of his men, and he cannot possibly do this unless he has a clear knowledge of the principles of disease causation and prevention, and applies that knowledge to the conservancy of his camp, the supply of drinking water, and many other details. He cannot always have a medical officer to fall back upon for advice; occasions are constantly arising when he is on detached duty, probably with a small body of men, and he will then have to act on his own knowledge and judgment, and on him will depend entirely the question as to whether, in a few weeks' time, he will still have under him an efficient body of fighting men, or whether these will have dwindled to a fraction of their original strength, many of them having been admitted to hospital with enteric fever or dysentery, while of the remainder the number of ineffectives is daily increasing.

We cannot have a clear conception as to what measures will be effectual in the prevention of disease, unless we have a sound and definite knowledge as to the manner in which that disease is caused.

Of late years our knowledge as to the origin and causation of disease has become immensely advanced, many of the old vague ideas have been swept away, and accurate scientific facts have taken their place.

I presume that everyone here has heard of bacteria. These organisms are the real and actual factors in the causation of disease, and it has been definitely and clearly proved by scientists, that certain specific bacteria cause certain specific diseases, and that these diseases can arise from no other cause whatever than by the entry, into the human body, of the bacteria which cause them.

Time will not permit me to describe any of the numerous experiments by which this fact has been proved, and I must consequently ask you to accept my statements on trust, and to believe me when I assure you that there is abundant indisputable evidence to prove them.

Any ideas, as to the possibility of disease arising of itself, should be dismissed, once and for ever, from our minds. The days have now passed by when men, even well-educated men, spoke in a vague manner, and possibly with a doubting smile, of the "germ theory of disease." The causation of disease by germs, or, in other words, by bacteria, is no vague theory, it is a definite and well proved fact, admitting of no doubt or question whatever.

Anyone who takes an interest in this matter, and cares to look further into it, cannot do better than read the "Life of Pasteur," a book of the greatest interest, not only to men of my profession, but almost equally so to anyone taking an interest in the matter.

I shall not enter into a detailed description of bacteria, but I should like to mention a few of their more important characteristics.

Firstly, as to their powers of multiplication. These organisms multiply with immense rapidity, the process taking place by fission.

Under favourable conditions of warmth and moisture, such, for instance, as the bacterium finds on entering the human body, it will, within one hour, divide into two parts, at the end of a second hour each of these parts will have again divided, and the process of subdivision continues, until, at the end of twenty-four hours, calculation shows that the original single bacterium will have multiplied to a number exceeding sixteen millions.

Now we will suppose that a single bacillus, or rod-shaped organism, of enteric fever or dysentery has entered the body of a human being, it

is easy to understand how, at the end of a few days, his whole system will be teeming with countless millions of bacilli, which are hourly being given off in his excreta, to pollute the soil, and hence, in all probability, to enter food or water, and so gain access to, and infect with the disease, fresh persons.

It is in this manner that an epidemic of disease commences, and, unless successfully taken in hand, it decimates a body of troops with fearful rapidity.

As to the conditions of bacterial existence, they like warmth and moisture, consequently the interior of the human body is extremely favourable for their growth and multiplication.

They are very resistant to cold, and may be frozen for long periods without being killed, but they are quickly destroyed by excessive heat, as by being boiled, or by the action of certain chemicals, known as antiseptics.

The mode of entry of bacteria into the human body is usually by one of three channels:—

1. Inspiration; *i.e.*, the bacteria are inspired with the air into the lungs, where they lodge, and set up the disease, as in pneumonia.
2. Ingestion; they are swallowed, and conveyed to the intestinal tract, as in enteric fever, dysentery, and cholera. This is by far the most important channel of entry of those diseases which affect an Army in the field.
3. Penetration of the skin, as in plague, etc.

A few words as to the manner in which the bacteria themselves cause the disease.

As a general rule, toxins, or poisons, are manufactured by the bacteria during the processes of growth and multiplication, these toxins act on the tissues of the body, and cause the various symptoms of the disease, headache, fever, etc.

It does not invariably follow that every person, whose system has been invaded by the bacteria, contracts the disease immediately. In certain cases they may remain dormant in the body until the system becomes lowered, as by fatigue, hunger, diarrhoea, etc., and they may then wake into activity, and, overcoming the natural resisting power of the body, set up the disease.

So much for the causation of the disease; we will now consider its prevention.

In speaking of the prevention of disease I am afraid that it is impossible for me to avoid going over a certain amount of ground which has already been trodden by others.

I must apologise if I speak of facts and rules which are already well known to all of you, but it is difficult for me to altogether exclude many rules and principles, which are possibly almost universally known and accepted.

In dealing with disease prevention on active service I shall speak of the two following maladies conjointly, *viz.*:—Enteric fever and dysentery.

These two diseases are together responsible for by far the greater proportion of our losses on active service, and it is convenient to discuss them together, as the bacteria causing them enter our bodies in the same manner, *viz.*, by being swallowed, and, consequently, preventive measures are the same for both of them.

I think we may consider the means of prevention under two heads:—

1. Measures which prevent the entry of the bacteria into our bodies.
2. Measures which maintain the health, and, consequently the resistant power of the individual.

To deal with the first group:—

The main channels through which the bacteria gain access to our bodies are:—

1. **Water.**
2. **Food.**
3. **Flies.**
4. **Dust.**
5. **Soil pollution.**

We will now consider these channels separately:—

1. *Water.*

All existing water supplies must be protected from contamination.

I do not propose to enter into all the rules regarding the subject of water protection, they have been laid down many times, and are to be found in every book on military hygiene.

I should like, however, to point out that all these measures must be carried out zealously and intelligently; if performed in a perfunctory and half-hearted manner the result will be valueless. For instance, it is not sufficient to publish an order to the effect that a certain supply of water is unfit for drinking purposes—such steps should be taken as will render the use of the water an impossibility.

If the water were originally pure and uncontaminated, the measures laid down would, if carefully carried out, effectually prevent the introduction of disease from this source, but, unfortunately, one is obliged to regard most water supplies, certainly those in India, as already, to a greater or less extent, contaminated.

Anyone who has been in India, and has noticed the ordinary habits of the native, will readily understand that this is the case. This being so, while every effort must be made to prevent further contamination, the question of the purification of the water must be considered.

The principal means by which water may be purified are:—

- a. **Heat (boiling).**
- b. **Filtration.**
- c. **Chemicals.**

We will now consider these in rotation:—

a. *Boiling.*

This is an excellent measure, for, as I have already mentioned, the bacteria of disease are quickly killed by boiling, and water, if boiled for one minute or longer, is effectually sterilised, *i.e.*, any bacteria which it contains are destroyed, and it may be subsequently drunk with impunity. There are, however, various difficulties to be overcome. One of these is the question of fuel, which it may not be possible to obtain in sufficient quantity, or to transport; a second difficulty is the necessity for cooling the water before it can be drunk; and a third is due to the fact that, if the water is boiled for more than a few minutes, it loses its dissolved gases and becomes unpalatable.

As to the means by which these difficulties may be overcome:—

The first, as to fuel, may, to a considerable extent, be surmounted by using a stove on the *primus* principle, which consumes oil; by means of such a stove about 20 to 25 gallons of water can be brought to the boiling point with an expenditure of about eight ounces of oil.

Unfortunately, the *primus* stove is extremely liable to get out of order, it requires to be carefully screened from the wind, and must also be absolutely protected from dust and grit.

Captain Scott, in his very interesting account of the voyage of the "Discovery," remarks especially on this point, and lays stress on the fact that this stove is only efficient if worked by a man who thoroughly understands it, otherwise it speedily gets out of order and consequently becomes useless.

The second difficulty, as to cooling the water, may be overcome in various ways; one method is that employed in the Forbes-Waterhouse steriliser, which is used in the United States Army. In this apparatus, by means of a heat exchange mechanism, the water, after having been boiled, parts with a considerable amount of its heat to the incoming water which has not yet been heated.

It is claimed for this steriliser that, in one pattern, the outgoing sterile water is only $4\frac{1}{2}$ degrees higher in temperature than it was on entering the apparatus.

This steriliser is spoken of as having worked well in the United States Army, but I believe that it is still more or less on its trial, and I think that the perfect apparatus remains to be found. I believe that, in the more recent pattern, in which weight has been, as far as possible, minimised, the water is not cooled to nearly the same extent as in the earlier, and heavier, design.

The third difficulty, as to taste, may be overcome by boiling the water for such a short period that, although the bacteria are killed, yet the greater proportion of the dissolved gases remain in the water, which is, consequently, palatable.

The Forbes-Waterhouse steriliser is a delicate apparatus, and, unless transported and worked by men who thoroughly understand its mechanism, it is very liable to get out of order and become useless; it is evident, therefore, that it should be supervised and managed by trained men, and not handed over to anyone except a person who is thoroughly conversant with it.

The water must be clarified from mud and coarser particles before being passed through the steriliser, for not only will water containing sediment or mud be unpleasant to drink, but, owing to the mechanical irritation caused by the particles which it contains, it will be extremely likely to produce diarrhoea.

The water of many of the rivers in Ladakh and Kashmir and on the North-West Frontier contains large quantities of mica in suspension, and, unless this is removed before the water is drunk, diarrhoea of an extremely severe nature will almost certainly result.

Water-boiling on a large scale may be carried out in standing camps.

In Ladysmith sterilisation was effected by Colonel Sim's apparatus, in which the water was first boiled, the sediment precipitated by the addition of alum, and the water was then cooled in a separate cylinder before issue.

This apparatus delivered about 3,000 gallons per day, and I believe that the results from its use were eminently satisfactory.

We now pass to the second method, that of filtration. There are several fairly satisfactory forms of filter at present in use, of which the Berkefeld is perhaps the best known.

The following points must be observed with regard to all of them:—

1. The water must be clarified from coarser particles, sand, mud, etc., before being passed through the filter, otherwise the apparatus will speedily become choked and useless.

This primary filtration is usually effected by means of a barrel or basket, containing charcoal or sand and gravel, or by means of bags of canvas or blanket, or some such simple method.

2. The filter must be regularly, thoroughly, and skilfully cleansed, otherwise it will speedily become worse than useless. The Berkefeld filter should be thoroughly cleansed at least every third day.
3. The filter must be looked after, and worked, by skilled and careful men; even in their hands the apparatus is liable to get out of order, owing to the rough usage of active service, and this is much more likely to happen if the filter is handed over to men who do not thoroughly understand it, and realise the care necessary to ensure its efficiency.

It is manifest that filtration is purely a mechanical process, and cannot have any eliminating effect on substances which may be in solution, so that it is evident that chemical poisons, dissolved in the water, will not be excluded by filtration.

Consequently, no matter by what process sterilisation is carried out, the source of the water, well, spring, or stream, must be kept as clean, and free from decaying animal and vegetable matter, as possible.

There is a new pattern water cart, which is at present on trial, in which the water passes through a filter in the interior of the cart, and is consequently purified before being drawn off. I believe that this cart promises well, but I cannot speak of it from personal experience.

A minor, but an extremely important point, and one which can be seen to by the company officers only, is the water in the men's bottles.

It should be absolutely ensured that these water bottles are only filled with such water as has been previously sterilised by boiling, or other method.

The men's bottles should be thoroughly cleansed with boiling water at regular periods.

Men should be instructed and trained to husband the supply in their bottles. This is entirely a matter of habit and training; if a man commences to drink within the first few miles of a march, he will certainly continue to do so at frequent intervals, and will very soon finish the supply in his bottle, and will then, if he can, drink from any water which he may happen to come across.

This is a point on which the discipline in the Japanese Army is extremely strict, and I believe that it is most unusual for the Japanese soldier to drink from any unauthorised water supply.

Sir Ian Hamilton, in his recently published book, draws attention to this fact, and states that the Japanese soldier neglects no rule of sanitation, and is most scrupulously particular in carrying out every measure which is conducive to the maintenance of his health, and consequently, of his efficiency as a fighting man.

In reviewing these two different methods of water sterilisation it is impossible to say definitely that either method is the better.

In some instances boiling can be effectually carried out, and will prove satisfactory, while, under different circumstances, filtration will prove to be the most efficient means of sterilisation. As a general rule I think that, while at the base and on the lines of communication, sterilisation can best be carried out by boiling; at the front the water can most readily be purified by filtration.

As regards the comparative utility of the different appliances for sterilisation I think that the perfect apparatus is still to be found, but at the same time, I think that several of those in use at present will prove quite efficient, if worked by men who thoroughly understand their mechanism.

To my mind this a most important point, for it is impossible that a good result can be expected if an apparatus, such, for instance, as a Forbes-Waterhouse steriliser, or a complicated filter, be handed over to men who have an insufficient knowledge of the mechanism of such articles, and possibly the crudest ideas as to the methods of sanitary science.

As regards the third method of water purification, namely, that by chemicals, I shall say but little. It is manifest that there are many difficulties in the application of such methods on active service.

At the same time I think that there is scope for the employment of such a method as Vaillard's in sterilising the water for small detached bodies of men, such as picquets and scouting parties.

In this method the water is purified by the action of free iodine, which is subsequently neutralised by the addition of hyposulphite of soda.

The materials are very portable, and the process of sterilisation is extremely simple, and, I believe, efficacious.

2. *Food.*

Turning now to the question of food:—

A considerable portion of food on active service is issued in tins.

These tins should be very carefully inspected on issue to the men, and any which are bulged or indented, or which emit a hollow sound when struck, showing that putrefactive gases are forming in the interior, should be rejected.

Tins may be perfectly sound when inspected, and issued in bulk, at the base, but may become injured, and their contents poisonous, before issue to the men some days or weeks later.

Tins of food should be carefully packed in straw, etc., in order to avoid injury, and should, if possible, be stored in a cool place.

The quality of the cooking, and variety in the food, are matters which necessitate attention.

It should be borne in mind that dyspepsia and diarrhœa, which may easily be induced by bad cooking, or by a monotonous diet, and which, of themselves, are comparatively minor evils, predispose to the much graver diseases of enteric fever and dysentery.

I now come to the third channel of infection:—

3. *Flies.*

These insects play an extremely important part in the conveyance of the bacteria of disease.

This had been repeatedly proved; for instance, flies have been allowed to settle on the discharges from patients suffering from enteric fever, and the insects have then been permitted to walk on plates of gelatine, the result being that colonies of enteric bacilli have developed in their tracks.

There is no proof that the enteric bacilli pass through the digestive tract of the fly, but there is clear evidence that they adhere to the legs, wings, and bodies of these insects. Another experiment is that of placing two jars of sterilised milk side by side, leaving the mouth of one open, and so exposed to the incursions of flies, and covering the other with coarse muslin.

At the end of twenty-four hours the milk in the exposed jar is found to be swarming with bacteria, the milk in the protected jar remaining sterile.

There has been abundant evidence of late years to prove the large part which flies play in the spread of disease.

Dr. Nuttall, of Cambridge University, states that he considers the evidence as to the rôle of flies in the diffusion of cholera as "absolutely convincing."

The commission appointed to investigate the cause of the epidemic of enteric fever in the Volunteer camps in the United States, during the Spanish-American War of 1898, stated that the spread of the fever was, in their opinion, effected by flies.

During this campaign the epidemic of enteric fever gradually decreased with the approach of the cold weather, when the flies became disabled, and unable to carry the germs of infection.

The same fact has been noted for some years in South Africa.

When the prevailing wind is from one direction, a fly-borne infection will extend in the same direction as the wind, as the insects, on rising in the air, are carried along by the breeze.

As regards the life history of the common fly. The female insect lays eggs, to the number of about one hundred and twenty, in decaying organic matter, especially in the crevices of horse dung; the larva, or maggot, is hatched out from the egg in twenty-four hours' time; after a period of from five to seven days this larva becomes a pupa or chrysalis, and from this pupa, after a further period of five to seven days, the fully-developed fly emerges.

Consequently, the mature fly is developed from the egg in about a fortnight.

The adult insect feeds on any dead animal matter, and, if permitted, will divide its attentions impartially between the latrines and the men's food supplies.

As to the measures which should be adopted in order to check the spread of the disease by flies—these practically resolve themselves into the protection of food from their incursions, the destruction of

their breeding places by the removal of all horse litter and refuse, and the careful supervision of the latrines, for it is in the latrines that the insects come into contact with the bacteria which cause disease.

As regards the destruction of refuse, Major Caldwell, in his book on disease prevention, describes an improvised destructor which I should think would answer excellently in the absence of special apparatus.

It simply consists of two short trenches intersecting each other at right angles, with a chimney at the point of intersection. A fire is lighted at the base of the chimney, and the rubbish is thrown down from the top; by this means the refuse is more completely destroyed than it is when burned in the open.

Latrines in standing camps should, when possible, be thoroughly and regularly disinfected by quick-lime and water, or other means, and dry earth with scoops must be provided in every latrine, temporary or permanent, and this earth must be freely used by the men.

4. *Dust.*

With the question of dust I shall deal briefly, it is an undoubted factor in the dissemination of disease.

Experiments by Firth and Horrocks prove that enteric bacilli can live in dust or dry earth for over three weeks, so that one can readily understand how, if latrines are left uncovered, a spell of dry weather, followed by a storm, will spread the germs of disease all over the camp.

5. *Soil Pollution.*

I now pass on to the question of soil pollution; I have left it to the last, but it is, probably, the most important factor of all in the spread of disease.

New camps are as a rule, healthy; after they have been occupied by a succession of troops they become very much the reverse.

Camps are often left in an extremely dirty condition when troops vacate them, this condition being especially noticeable in the vicinity of latrines; when the next troops arrive on such a camping ground they are bound to suffer in consequence.

The ideal method would be for no camping ground to be occupied by successive bodies of troops, each unit, as it arrived, being located on a fresh site, but this is manifestly impracticable in many instances, and consequently every care must be taken to prevent soil pollution.

Before I go further I should like to bring two facts, regarding enteric fever, to your notice.

The first is that the bacilli of this disease are, in many cases, voided in a person's excreta for some time before he shows any manifestation of the disease itself, consequently, a man may appear to be quite healthy while his excreta are swarming with the bacilli.

The second point is that the enteric bacilli are voided in large numbers in the urine.

From these two facts we can understand how important it is that men, whether healthy or sick, should, under no circumstances, be permitted to go elsewhere than to the latrines or urinals for the purposes of nature.

Whenever troops are halted, even for half a day, latrine trenches must be dug, and the men must, on no account, be permitted to use any other place.

This is a point which has been very frequently neglected in the

past, and men, when halted for short periods, have not been prevented from strolling, for the purposes of nature, into the jungle or rough ground in the vicinity of the camp. This custom is fraught with disastrous consequences, for the result is that the ground in, and around, the camp, becomes contaminated, and any troops which may subsequently be located there will inevitably suffer.

The question of the supervision and care of latrines and urinals is an extremely important one, as soil pollution is directly dependant on the condition in which these are kept.

The supervision of latrines is an unpleasant duty, and is, consequently, extremely likely to be "shelved," everyone relegating the duty to someone else, the result in the end being that the supervision of the latrines is neglected, their condition speedily becomes the reverse of sanitary, and an outbreak of enteric fever or dysentery follows.

If sanitary precautions regarding latrines, urinals, and the disposal of refuse, are scrupulously carried out, the worst evil of all, soil pollution, will be, to a very great extent, prevented, and, the greater the degree of this prevention, the better will the health of the troops be, and the less the incidence of enteric fever and dysentery.

I have already stated that I consider this question of the disposal of excreta, and consequent presence or absence of soil pollution, to be the most important factor of all in the prevention of disease.

Bearing in mind what I have already stated with regard to disease causation, we can see how all these other channels of entry, water, food, flies, etc., depend upon the presence or absence of soil pollution.

The *foens et origo mali*, the bacillus, is present in the excreta of the affected person, if this bacillus is permitted to gain access to the water supply, or to be carried by flies, dust, etc., to food, an outbreak of disease will follow, and, consequently, all these channels depend, in the first instance, on the disposal of excreta.

I think that I have now spoken at sufficient length regarding these diseases, and shall pass on to briefly consider the question of malaria.

I have decided to say a few words regarding this group of diseases on account of the great extent to which our Armies on the frontier of India are affected by it.

Although malaria does not cause the severe epidemics of disease which arise from enteric and dysentery, still, it incapacitates a very large number of men, and renders them useless to the fighting force for the time being.

Malaria was formerly ascribed to various vague causes, "miasma," chill, etc.

It was discovered, many years ago, that the causative factor of the disease was a small animal organism, which, having obtained access to the blood of human beings, fed upon, and destroyed, the red blood corpuscles.

The means by which this parasite entered our bodies remained for many years unknown, and our present knowledge on the subject is very largely due to the researches of Major Ross, in the Indian Medical Service.

Ross discovered that the organism was transmitted to man and animals through the agency of a particular species of mosquito, called the *Anopheles*.

The mosquito most commonly met with, in India and other countries, belongs to the genus *Culex*, and the insects belonging to this class, although they suck blood freely, do not convey the organism of malaria.

The distinctive naked-eye appearances of the *Anopheles* and *Culex* mosquitoes are mainly as follows:—

In the *Anopheles*, the thorax, or anterior portion of the body, presents three longitudinal stripes, its wings are spotted, the head, thorax, and abdomen are in a more or less straight line. When the insect is in a resting position, its attitude approaches the vertical, the body of the insect forming an angle with the surface on which it rests.

The *Anopheles* mosquito does not migrate far from its breeding ground, and it only feeds between sunset and sunrise.

In the *Culex*, the head and thorax together form an angle with the abdomen, so that the insect presents a somewhat "hump-backed" appearance, and its resting attitude approaches the horizontal, so that the body of the insect lies more or less parallel with the surface on which it rests.

This variety feeds throughout the day and night.

There are many other scientific distinctions between the two species, into which I shall not enter.

The female mosquito lays her eggs in water, these eggs are hatched, on the second or third day, into larvæ; these are little wriggling large-headed creatures, which we may see by the hundred in any pool of water in India.

The larvæ become pupæ, and from these pupæ the perfect insects emerge.

The process of development, from egg to the perfect insect, occupies about a month.

Each female mosquito commences to lay eggs when about a week old, she lays several hundreds at a time, and continues to lay them in batches throughout the summer, so that one pair of mosquitoes produces many millions of progeny in a season.

The female *Anopheles* usually selects, as her breeding place, small collections of water in the vicinity of houses, irrigation channels in gardens, stagnant pools, etc.

The problem as to the means of destruction of these mosquitoes, and their breeding places, by drainage, and other means, has attracted much attention of recent years, and excellent results have been attained in some places.

On active service the following are the main points to be observed with regard to the prevention of malaria:—

1. See that all measures recommended as to the use of mosquito curtains, etc., are, whenever possible, carried out.
2. Avoid camping in the immediate vicinity of water, particularly of stagnant pools or sluggish streams.
3. The vicinity of villages, the inhabitants of which are known to be fever-stricken, should be carefully avoided.
4. Adopt every measure for maintaining the general health of the men.

I now pass to the second group of measures for the prevention of disease, namely, those which serve to maintain the health, and, consequently, to increase the power of the individual for resisting the inroads of bacteria.

I shall deal very cursorily with matters under this heading. Most of the measures for maintaining the general health are known to all regimental officers, who, in my experience, spare no efforts to ensure that the men under them are well looked after in the way of clothing, food, etc.

I shall just mention a few of the more important necessities.

Firstly, overcrowding must be, as far as possible, avoided; of course, the exigencies of active service are such that it is sometimes impossible to avoid massing a large number of men on a limited area of ground, but, whenever means admit, ample space should be provided, for there is no doubt that overcrowding is invariably followed by disease.

As to clothing, it should, whenever possible, be ensured that, after a long march, the men change into a dry shirt before lying down.

There is one point with regard to clothing which, in my opinion, is of the greatest importance, and that is the cholera belt.

I am quite certain, and I think that the majority of medical officers will agree with me, that a warm dry flannel belt around the abdomen is of the utmost service in helping to ward off chills, and consequent attacks of diarrhoea and other maladies, which, as I have already pointed out, predispose to more serious diseases.

Such a belt should invariably be worn at night time.

Men should be instructed to report sick without delay if they have any symptoms of diarrhoea. If this rule were invariably carried out, many attacks might be cut short and prevented from becoming serious.

As to marching, men should be marched in close formation as little as possible.

The reasons for this are that, when in close formation, men are breathing more or less foul air, which is not only thick with dust, but is also to a great extent, laden with the products of respiration.

As there is less circulation of air the men get much more heated and prone to suffer from heat stroke.

With regard to halts—prolonged halts are objectionable, frequent short halts are much more advisable in every way.

If marched for several miles, and then given a long rest, the muscles become stiff, and, when the march is resumed, the men are feeling far more languid and fatigued than if halted for shorter periods at more frequent intervals.

I think a good average to allow is about fifteen minutes at the end of the first two miles, and after that to halt for ten minutes every hour.

Food should only be sparingly partaken of while on the march, the principal meal being eaten after arrival in camp.

The advisability, or the reverse, of the use of alcohol on active service has frequently been debated.

The consensus of opinion is undoubtedly against the use of alcohol unless under exceptional circumstances.

Useful as it is at times, as, for instance, after a long and tiring march, when the men are exhausted, it is probably, if given as a routine measure, productive of nothing but harm.

There is no doubt that men improve considerably in physical condition during periods of enforced abstinence.

The practice of serving out tots of rum, as a routine measure, on cold nights, is certainly harmful, the liquor induces a feeling of

warmth at the time, as the blood vessels on the surface of the body become dilated and flushed, but this simply means that so much reserve heat is given off from the body, which is consequently left in a less fit condition to combat the cold.

And now I think that I have given a very brief outline of some of those measures for disease prevention which should be carried out on every campaign.

Our experience in the past has been, as regards epidemics of preventible disease, an unhappy one.

What can be done in order to effect an improved condition of affairs in the future?

Perhaps this question is one which hardly comes within my province. The control and regulation of matters concerning the broader lines of Army sanitation and the subjects bearing on it, lie in abler hands than mine; but I may perhaps be permitted to give my opinions, and, even if they are not accepted or agreed with, they will probably elicit other views, and lead to a discussion which may be of service to others, and most certainly will be so to myself.

Firstly, I do not think that epidemics of disease on active service can be entirely prevented by the adoption of any one sanitary measure, such, for instance, as water-boiling.

In saying this, I hope that I may not be misunderstood; nothing is further from my thoughts than a desire to belittle in any way the necessity for the purification of drinking water by boiling or any other efficient method. As I have already stated, this measure is of extreme importance; but I do not think that it will of itself prove a panacea in the prevention of disease.

I think that we must, while neglecting no details, approach the problem on broader lines than this.

To my mind there are two principal measures which are needed with regard to the sanitation of our Army on active service, and these two measures, if organised and perfected, would, I think, entirely remedy the great evil which has existed in the past.

The first measure is sanitary organisation. I think that a sanitary corps of officers and men should be formed, who would be specially trained in all the methods of sanitation and disease-prevention. On such a corps would devolve the duty of seeing that the Army was kept up to date in all sanitary requirements.

With the officers would rest, subject of course to the military exigencies of the moment, decisions as to the selection of sites for camps, installation of water supplies, and many other important matters.

Sterilisers, filters, destructors, and other sanitary appliances should be under the supervision of the members of this corps, and it could thus be ensured that these appliances were worked by skilled men only, and such as were conversant with their mechanism and requirements.

I think that the formation and efficient training of such a body would be of the utmost service in the prevention of epidemics and in lessening the incidence of disease on a campaign.

Now, would the formation of such a corps fulfil all requirements, and succeed in attaining the desired end?

No, I do not think that it would; and I now come to the second point, and that is, the necessity for the further education in sanitary principles of regimental officers and men.

This is, to my mind, an equally pressing necessity.

I do not of course mean for a moment that it is necessary for regimental officers and men to become experts in sanitation, but I do mean that they should understand the principles of the subject: the manner in which disease arises, and the means by which it can be prevented.

Sanitary reform cannot, in my opinion, be effected entirely by the formation of a sanitary corps, or by improved methods of water purification. It must also be carried out by the officers and men of every unit.

I am convinced, in my own mind, that regimental officers and men are as a rule extremely deficient in knowledge of the causation and prevention of disease on active service.

Here again I hope I may not be misunderstood. I do not wish in any way to try to impute blame to, or to accuse of culpable ignorance, the officers or men of any branch of our Army; lack of knowledge on this subject is not their fault; it is the inevitable consequence of the conditions under which our Army exists in this country.

Under peace conditions, regiments live under the most favourable circumstances as far as sanitation is concerned.

All sanitary measures are carried out for them; when in barracks, sanitation proceeds automatically, and probably hardly comes under their notice at all, and even when in camp a supply of pure water is probably laid on, and rightly so, and all refuse and excreta are removed daily by contractors.

Let us consider what happens when these same regiments suddenly proceed on active service. Conditions then assume a vastly different aspect; everything has to be arranged, and all details carried out, by the officers and men themselves, and, inefficiently equipped with knowledge as they are, the performance of sanitary necessities in the units will be inefficiently carried out, with the inevitable result that outbreaks of disease will follow, and the physical efficiency of the unit, and consequently its fighting capacity, will steadily and rapidly deteriorate.

The formation of a sanitary corps will not remedy this; sanitation should be, and in many instances must be, carried out by the units themselves.

Even if the rules published for guidance are followed out in a rule of thumb manner, the methods will probably break down from the neglect, through lack of knowledge, of some simple measure, which, though sufficiently evident to anyone who has a certain amount of education in the causation and prevention of diseases, might not suggest itself to one who was lacking in knowledge on the subject.

For instance, a junior officer or even a non-commissioned officer finds himself in command of a detached body of men in a place where he has no one to fall back upon for advice. In such a case he should most certainly be fully competent to himself arrange for the protection and supply of water, the care of food, and above all, for the avoidance of soil pollution.

If lacking in knowledge on these points it will most probably happen that details are neglected, and that this small body of men will not only themselves become ineffective through sickness, but that they will also be the means of causing an outbreak of disease in the troops which subsequently occupy their camping ground.

I think that it is fully as important that officers and men should be competent to carry out such simple measures for disease prevention as it is that they should be able to take cover when necessary during an engagement and to shoot straight.

As I said before, many more men are rendered ineffective by disease than by the bullets of the enemy.

If all regimental officers and men had a definite knowledge as to how disease was caused, they would I think apply the rules for its prevention in a common-sense and practical manner.

If one soldier realised that the fact of his comrade using other places than the latrines for the purposes of nature would most probably lead to the contraction of enteric fever or dysentery by himself, he would look on the matter in a different light to that which he does at present.

There are many links in the chain of disease prevention, and the weakness of any one of these links will lead to failure.

No matter how perfect the organisation of a sanitary corps may be, epidemics of disease will still occur unless precautions are carried out in the very first link of all, *i.e.*, by the individual, and this, to my mind, can only be effected by the instruction of officers and men in the elementary rules of the origin and prevention of disease.

It is I think by the combination of these two measures—one, as it were, at the head, and the other at the foot, of Army sanitation—that good results will in the future be effected.

I fear that, in the limited time at my disposal, I have been obliged to touch but briefly on many important points, which were worthy of more lengthy consideration; but I hope that even this short address may have been of some service in bringing to your notice a matter which to my mind—and, I think, to the minds of all Royal Army Medical Corps officers—is of the most vital importance.

Putting aside altogether my personal views and beliefs in the matter, surely there is unlimited clear and indisputable evidence to show how enormously the success of our Army on active service is dependent on its freedom from disease.

When we remember that these diseases are preventible, and that the measures which prove effectual in their prevention are well known, surely it behoves every one of us, in whatever branch of the Service we may be, to unite in recognising the value of these measures, and to spare no effort in seeing that they are carried out.

I hope I carry conviction when I state positively that Army sanitation is no idle fad, no theoretical idea; it is based on proved and indisputable facts, the elements of which everyone in the Army should be thoroughly acquainted with, and it is a subject which will most assuredly force itself on our notice even more emphatically in the future than it has done in the past.

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Lieut.-Colonel A. M. DAVIES, R.A.M.C. :—I have no words of criticism at all to make on Major Goodwin's excellent paper, because I thoroughly agree with every word of it. I feel that it is extremely comprehensive, and that it is exceedingly sound. I would like, however, with your permission, Sir, to make one or two observations on two points, more in amplification of what he has said and by way of personal illustration. First of all, with regard to the co-operation of combatant officers, I think that that is one of the most important points of progress that we can desire—to get the hearty co-operation of combatant officers, because without it I am afraid we shall not advance very far. If we have that hearty co-operation, then we can do everything. The army medical officer by himself has not at present sufficient power and sufficient means of taking action to carry out the measures that he knows to be absolutely necessary, but if we had the co-operation of the combatant officers, these necessary measures would be carried out. In order to get that hearty co-operation, the combatant officer must understand what is required, and therefore he must be instructed. It is absolutely necessary that he should know the reason for the things which have to be done, as Major Goodwin has already stated. In one of the Blue Books with regard to the South African War, which give such very shocking and horrible reading to anybody who is interested in Army sanitation, it is related that somewhere near Pretoria a civilian medical officer saw a party of men coming to draw water in order to fill their water-bottles. There was a dirty little stream running through the field, and the party of men, with their commanding officer, came up and filled their bottles at this stream. At a very short distance further on, a pipe supply of water had been laid on at very great expense, the water being of good quality. The civilian doctor went to the officer commanding the party and said: "Do not you see that your men are drawing this filthy, poisonous water; why do you let them draw it?" and the officer replied: "What can you do? The men *will* do it; you cannot stop them." You can imagine the observations that should be made to that officer as well as I can. When I was in India making enquiries into enteric fever at different stations—I am speaking about the dry earth system of excreta disposal, of which you all know—I came to a certain place. I think I have a fairly large acquaintance with the dry earth system in latrines, but nowhere, as far as my experience goes, have I found it well carried out except in one regiment—only once in all the places I have been to. In the particular station to which I am referring it was very badly carried out indeed. I was going round the lines with the commanding officer, and having been to one latrine after another with him, and found the most disgusting state of things, I said: "Sir, your men are not using

the dry earth; why do not you make them do it?" He said: "What can you do? They will *not* do it; you cannot make them." Whether in one case the officer says you cannot *stop* them, or in the other case the officer says you cannot *make* them; whether it is in one case drinking dirty water when there is clean water ready to drink if they will only take the trouble to get it, or in the other case not using the dry earth, surely that is a matter of discipline, in which there ought to be no difficulty, in a body of men living under authority, as military men are, in getting the orders and regulations carried out. I believe that if combatant officers were imbued with a knowledge of the reasons of these things—that it is not a mere fad, but that there is a sound scientific basis for all the regulations which are put forward—I believe they would see them carried out. At present they are not imbued with that idea, and they do not fully understand it, and I am afraid they do not, as a rule, see that the regulations are carried out. What is required is for the commanding officer to take the matter seriously. I am convinced there is a very widespread, although not universal, interest in sanitation amongst combatant officers. I am happy to say that I have come across many instances where combatant officers are as keen as anybody could possibly be. In one instance of the faulty application of the dry earth system I went to the general and asked him if he would be so condescending as to come to a latrine with me, which he did. He was horrified; he was disgusted; he was enraged, and very angry with everybody, including myself. He did not let the sun go down on his wrath; he published a general order that evening, and ordered that every latrine was to be inspected by a combatant officer every day till further orders. I need hardly say that the latrines in that station—I will not mention it by name (it was in Asia)—were in a very much better condition afterwards than they were before. Then it is obvious that we must prepare in peace for what we shall have to go through in war, and that is really what Major Goodwin has alluded to. With regard to the question of water supply in peace time, the soldier in barracks, and, generally speaking, when camping out, is provided with a very pure supply of water, and all he has to do is to take it out of the taps. In time of war, however, quite the reverse is the case. All the preparations have to be made by himself for supplying himself with water. There is no water laid on for him. These conditions ought to be rehearsed and prepared for in time of peace. Another point which I think is most important is the question of water discipline. The men ought not to be allowed to take water when they want it. Whenever they feel thirsty they ought not to drink. On the march in India the men empty their water-bottles very early in the morning, and go thirsty for many hours together; therefore they will be apt to drink any kind of dirty water they come in contact with. Water discipline ought to be taught, so that the men should only drink in smaller quantities at stated intervals. That, I hold, can only be brought about by the personal example of their officers, and officers who are present will understand the extreme importance of that point. Then with regard to the question of the disposal of excreta in barracks in peace time, as the lecturer has said, the soldiers have nothing whatever to do with it. It is entirely automatic; he has himself nothing to do, but in time of war he has to do everything for himself. He has to dig trenches, or put on dry earth, or whatever it is. The other day I came across an instance where a regiment, which had been in barracks where water latrines were erected, and where they had nothing whatever to do, were moved to another barracks where the dry earth system was in

force, where a man ought to add the dry earth himself every time he uses the latrine. These men, as I say, had been accustomed to doing nothing, and when they went from one barracks to another they continued doing nothing. As you can imagine, the condition of the latrines was very soon appalling, and I have no doubt whatever that a considerable outbreak of enteric fever that occurred resulted from this neglect. It was very difficult indeed to get the men to carry it out, and the commanding officer had to take strong measures, which he did by having a patrol to go round and make prisoners of anybody they could catch not putting on the dry earth. That is a case in which it ought to have been somebody's business to give the men a warning beforehand on that particular point. Then the only other point I wish to refer to is that preparation in time of peace can only effectually be carried out by having manœuvres on a practical scale, where the men will have to do the things which we know they will have to do for themselves in time of war. By this means, and by this means only, can they be properly trained how to deal with active service conditions.

The Rev. W. B. DOWDING, Chaplain to the Forces, London:—I will not detain you by making any lengthened remarks, because it is not in my province to do so, when there are so many able officers present who are capable of expressing valuable opinions on the subject. I have risen simply for the purpose of asking whether the lecturer, or anybody else, will do this for us: Let us know what a man can best do in the matter of eating and drinking in order to avoid these attacks of disease to which reference has been made. I quite acknowledge that the sanitary rules laid down by the lecturer are very wise; but I equally understand the statement of those who say that you cannot make a man do certain things, and you cannot prevent him doing certain others. I think all of us have come across that sort of man. I therefore think it would be very helpful if the lecturer would state, for the information of the men and officers alike, how a man can best defend himself against attacks of disease—in view of its inevitable occasion by the exigencies of war—how he can best keep himself in health on active service. For instance, *what should he eat?* Cannot the lecturer suggest to the Commissariat Department something better than the everlasting bully beef and biscuits? And cannot the medical authorities suggest some special sorts of food for different climates? And *when* during the day a man should drink, and *what* he should drink? I also think it would be desirable if the question of the use of alcoholic stimulants on active service were gone into. That is a question which, to my mind, people seem to shirk, partly because it is a question on which there are differences of opinion, and partly because it is not a particularly popular one—on one side at any rate. While I have been on the Council of Army Temperance work—which means for the last twenty years—I have made it my special object to do all I can to promote temperance; but I cannot help feeling some misgivings with reference to the relation of total abstinence to enteric fever. I speak under correction, but I believe there is no doubt there was an intention to show after the late war that those who were total abstainers were more free from enteric than those who were not; but that the enquiry resulted in the opposite conclusion, and nothing more was heard of it. What the real truth is I am not in a position to say. I have known instances rather bearing out that statement. In a foreign station where I was quartered (it was not an unhealthy station), in one year three men died of enteric, and because all those three men happened

to be total abstainers the other men took stringent measures to ensure that they should not die of total abstinence. It was a curious fact that the three leading total abstainers were the only three men who died from enteric. Such a question as this might reasonably be asked: Would a regular supply of rum during those terrible weeks in Bloemfontein, during which I was one of the on-lookers, and helpless, in a way, have prevented that awful epidemic? I have expressed my own opinions on this subject in private discussion, but I would not like to mention them before so learned an assembly as this. Then I think it would also be of great interest if the lecturer could tell us whether some simple remedy could not be recommended for the troops to carry about in their pockets? When I was a small boy it was an old-fashioned remedy to carry about a piece of rhubarb root to chew occasionally when you did not feel up to the mark. It never got any the worse for wear in the pocket. Could not a simple remedy of that sort be issued to all the troops, to be used on the first signs of being "out of sorts," and thus avoid more serious illness?

Major H. P. G. ELKINGTON, R.A.M.C.:—I should like to say a few words about the question of sterilisers, because Major Goodwin mentioned in the course of his paper the Forbes-Waterhouse apparatus. During the manœuvres last year we had two patterns of sterilisers on trial during the whole period, one made by the Lawrence Company and one by Dr. Mallock. We found that in actual work on the march they were too cumbersome to use for everyday work, but were perfectly suitable when we got into camp. The chief drawback was that they only delivered thirty gallons an hour, and it therefore took four hours to fill the water cart. That puts sterilisers out of court altogether in their present form, as far as their use on the actual line of march is concerned. In standing camps no doubt they would be very useful. I heard a few days ago from the Lawrence Company that, from their experience at the manœuvres, they had modified their original steriliser, and had considerably reduced its size. The one they sent us was about 4 feet high, and when we wanted to deliver the water into the cart, it made a huge mountain, as we had to stand it on a packing case. Another drawback to the use of the steriliser was the absolute necessity of having a mechanic trained by the company who understood every detail in connection with the working of the machine. The lamps in both the Mallock and the Lawrence apparatus worked perfectly well, and gave no trouble, even if the wind was blowing hard; but there was always a difficulty in dealing with muddy water. We had to clarify the water before putting it into the steriliser. One of the main reasons for that is, that if not done, you will clog up the pipes before very long, and the whole apparatus would be put out of working order. With regard to the question of filters, Messrs. Slack & Brownlow have a very good field service filter, but their greatest improvement is the field service water cart. We had two patterns on the manœuvres, one with the filtering apparatus fixed behind the cart. This was the first one shown to the Army authorities; but we found after the first day's hard work across the Long Valley it leaked from the joints, and the water cart was useless. The second pattern, with the filter sunk in the body of the cart, gave most satisfactory results. I handed it over to an officer commanding a double company, and, having explained the working of the apparatus to him and the four men that he told off to look after the cart, it was found that they looked after it thoroughly, and took the greatest interest in the working of the machine. The cart was filled by the men by a hose pipe fitted to the machine

through its own pumps, and also in the ordinary way by the Royal Engineers' hose. We used all kinds of water; we did not mind what we used, as we took it for granted that, as the machine was sent down to us for trial on the march, Slack & Brownlow's apparatus was capable of giving us sterilised water. The water was used by the officers' mess, in addition to the company's mess, and we never had any complaint whatever. I examined the candles regularly to see that everything was going on all right, and also the asbestos covering; and as I found, in spite of the dirty water we used on the line of march, that the inner layers of the asbestos did not become even soiled, I did not sterilise the asbestos or the candles during the nine days we were working the apparatus. To show you how well the cart worked, I need only say that the water obtained from the filters was seven gallons in one and a half minutes when we commenced to use it, and at the end of nine days' consecutive work with all sorts of water, it was only reduced to seven gallons in two minutes. Certain modifications are to be made in the apparatus, and I was sent only two days ago a photograph of the improvements which were found necessary. With regard to the subject of special men being told off for the carts, I think that would be absolutely unnecessary, and would be multiplying the number of what you might call Staff-employed men. There would be no difficulty whatever in training any man in the regiment to look after the cart, to sterilise the candles and clean the asbestos, provided you induce the regimental officer in charge of the company to take an interest in the subject of giving his men good water. I do not think you will have any difficulty in doing that if you go the right way about it; we had none on the manoeuvres with the different companies to which the special appliances were told off. They all took the greatest interest in the matter, and gave us the utmost support. The men who should be trained for the purpose are undoubtedly the cooks, because on arrival in camp the water-cart is almost invariably placed adjacent to the kitchen, and with a kettle attached to the water-cart there would be no difficulty in the cook sterilising the candles and cleaning the asbestos. With regard to the question of water discipline, it was proved on the manoeuvres that that can be obtained if you go to the officers and ask them to carry it out. I had the fullest support from the general officer commanding and the other regimental officers, and in those cases in which we tried it we had no difficulty whatever. In the morning all the water bottles were filled with pure water, the cart started off full, and it was filled up again at intervals as required when the men had a halt; but the men were not allowed to get any other water except that which was drawn from the cart itself. That proves, I think, that if the medical officer will get the combatant officers, and more especially the non-commissioned officers, to interest themselves in this subject they will back you up and do everything that you require. With regard to the question Major Goodwin raised of digging latrines in peace time when the men have a halt for half an hour or longer, it certainly seems the right thing to do. I suggested it at Aldershot, because we found that on large field days the men fall out and practically foul the ground all round, and on going over the ground the following day you could see perfectly well where the regiments had halted. We raised this question and tried to see if it was feasible to do anything, but found it would be impracticable, from a regimental point of view, to dig trenches. The best we could arrange for was that parties of men on these large field days should be told off, when a halt was called, and by means of a flag or something of that sort should indicate where the men could fall out

for Nature's purposes, so as to limit, as far as possible, the fouling of the ground. Looking at it from a practical point of view, on marches and field days that is as much as we can hope for.

Colonel E. A. ALTHAM, C.B., C.M.G.:—I have very little to say on this interesting paper. I simply rise as a combatant officer, in order to express my entire sympathy with the subject on which the lecturer has touched and has so ably placed before us this afternoon. I think when the question of sterilising water on active service was first brought forward some few years ago after the South African War, there was a certain fear on the part of some of us who had more or less to do with staff duties that the limitations which active service necessarily places on the preservation of life had been a little bit over-looked. The conditions of war are so entirely in contrast with those of peace on this point that we cannot expect to carry out the same system. In peace, the very first duty of the community is to preserve life; in war, the whole object of operations is to take life—to take the life of the enemies' soldiers. But in doing so, in beating down the enemy by destroying his soldiers, we have to use up more or less the lives of our own soldiers. Every general who fails to realise this truth, who shirks from sacrificing the lives of his soldiers when necessity arises, is an incompetent commander. On the other hand, every general who fails to economise the lives of his soldiers whenever the necessities of the war permit, is equally criminal and equally culpable. Then, in war, we seem to get a balance of two conditions; they are both opposite to each other, and yet they have to be borne in mind by the responsible military authorities. There are occasions on which the lives of one's own men become a matter of indifference compared to that of defeating the enemy. There are other occasions on which there is no immediate opportunity of destroying the enemy, and, therefore, it becomes of paramount importance to preserve the lives of the men whom you will use at some future date for your military purposes. I only troubled you with these points because they seemed to me to bring out more or less the general principles which have a certain practical knowledge bearing on what we can do on service, and what we cannot do on service; and it is having regard to that practical bearing that I would congratulate the lecturer very much on the moderation and restraint with which he has approached the subject. I think throughout the lecture, and throughout the remarks which other speakers have addressed to the meeting, the military necessities of service have been constantly and continually borne in mind. On service, I take it, the most difficult problem is that of transport. It was the question of the extra transport, the extra costs, the extra vehicles, and the increased number of animals which would be entailed which frightened many of us when this question of sterilisation was first mooted, and personally, it was a great satisfaction to me to hear from the last speaker that a cart has been lately tried down at Aldershot, which, I understand, will suffice for the supply of water for 500 men. If that is so, it facilitates the solution of the problem to an enormous degree, because it means that for an Army Corps some seventy extra vehicles at the outside would suffice to preserve the whole Army Corps from this great danger of enteric fever. Subject to those limitations, I am quite certain there is no combatant officer in the whole Army who will not do the utmost in his power to preserve the lives of those for whom he is responsible. That it should be possible, for instance, for those things to have occurred, which have been mentioned this afternoon, such as an officer being indifferent as to whether his men

drew water from a dirty or a clean source, or indifferent to the most simple forms of sanitation, is a lamentable thing; but I cannot but hope that, if not at the present moment, at any rate in the very near future, these things will not happen in the British Army.

Colonel G. H. SIM, C.B., R.E., Commanding Dépôt, Chatham :—
The question of the individual sanitation of every man in the Army or in a force is a point of equal importance with the question of whether the authorities can provide him with good water. On active service we have to consider many cases where very small parties of men are detached from their main bodies, and very likely remain for some time in one place. It is impossible that water-carts which are suitable for a battalion could be of any service to small outposts of a company that are, say, two miles away on the top of a hill. We must, I think, not only get the knowledge which the lecturer says is necessary for every non-commissioned officer and man, but we must get the practice. The only way in which we can get that practice is at manœuvres; and not only at manœuvres but on every winter march that a battalion takes for exercise, sanitary rules should be observed. For instance, when there is a five minutes' halt, why should men be allowed to foul their neighbours' ground? Every man has a spade in the form of his bayonet. The great thing to do is to prevent the pollution of the soil with a view to preventing the water supply being contaminated, and to prevent the pollution of food by flies. Every man should be made to understand *in peace time* where he can go safely for Nature's uses without the fear of polluting the water supply of the country. Why should not every man dig his own little hole in the ground and cover it up? That would prevent flies getting at the excreta, and if that is done the risk of pollution of food and water is minimised. I think it is a personal matter altogether. We read about latrine trenches in the regulations; but I have never seen the idea propounded in them that when a man has used the trench, he should cover up the excreta *himself*. I have seen that plan carried into effect in South Africa with great effect, when it was insisted that every man who went even to urinate should cover up his urine with a little dry earth. There was nothing to attract flies, and consequently there were few flies. In many block-houses that arrangement was carried out, with the result that there was almost an absence of flies, and the men were perfectly healthy. It is *personal* sanitation which should be practised by every single man in the Army, although prepared and supervised arrangements are equally necessary for camps and large bodies of troops. If at manœuvres the officers had to go out and find water for their men, there would be very little chance, after some practice, of their using bad water. They would understand how to get good water somehow or another, or to treat it if not good. There is one question I should like to ask the lecturer about the sterilisation of water. He talked about the boiling. I was under the impression that it was not necessary to boil the water, but that if the water was brought up to a temperature of 190°, and kept at that temperature for a little while, all the bacteria of enteric were destroyed. That is a rather important point, because the lecturer mentioned that if you boil water you make it unpalatable. If you only bring water up to something under boiling temperature, it remains palatable. In standing camps, where thermometers can easily be obtained, it is very much better that people should know that, and should not make the water unpalatable by excessive boiling. Where there is no thermometer it is safer to boil

it, and run the risk of it being unpalatable. With regard to the measures that should be taken for sterilising water, I cannot help thinking that the principle which should be adopted is that whenever large bodies are together and sterilisers and filters are feasible, they should be used, but that immediately you get small parties away from the main bodies, there should be some means of sterilising the water by chemical action, and that every man should carry some sterilising stuff in his pocket, so that if the water is doubtful he could put in a small quantity, which would make that water at any rate safe. If it makes the water a little unpalatable, I am not sure that that is not rather a good thing, because we have heard a good deal about men drinking an excessive quantity of water, and if the water is not very palatable, perhaps that evil might be remedied. I think one great reason for excessive drinking on service is the "bully beef." "Bully beef" is essentially thirst-producing food; there can be no doubt about that, and there is no doubt that men get into the habit of drinking after a short course of it. I think something might be invented a little less thirst-producing than "bully beef" in a hot country. There is just one more point I should like to refer to in connection with sanitation, namely, that it would be a good thing if the King's Regulations or some other regulations which are applicable to the whole Army gave a few paragraphs of what a soldier is *not* to do in the way of sanitation, and that if he is ever found doing one of those things he should be liable to punishment just as much as he is if he commits any other military offence. There are no personal sanitary regulations that I know of at all, and the consequence is that every officer has to make laws for himself and do the best he can with his men. If a few regulations were drawn up, and a man could be actually punished for doing things that he is told not to do, it would be a great assistance to the combatant officers. There is one little point with regard to malaria I should like to mention. I have found that paraffin oil is of the greatest efficacy in the prevention of the bites of mosquitos. Mosquito curtains are all very well, but if a mosquito gets inside—and he often does get inside—they are not much good. Paraffin oil is used, I believe, largely for the prevention of mosquito breeding in ponds. When I was in India I never had a mosquito curtain at all, although I was very much subject to being bitten by them. By putting just a little paraffin oil over the exposed parts of the skin I found that the mosquitos would never come near me. I often told officers about it, and I have practised it myself, not only in India, but also in other hot countries and in Italy, where mosquitos abound, and I have always found it extremely efficacious. The mosquito will not bite if you have paraffin oil on the skin, and for active service that is rather a useful thing to know. On active service I always carry a little bottle of paraffin oil in my wallet.

Major T. McCulloch, M.B., R.A.M.C. :—The paper we have listened to is full of points of the greatest interest and importance to everyone who has the best interests of the soldier on field service at heart. In the past it has been too much the case that sanitary matters have been regarded as chiefly the concern of the medical officer, and that little or no responsibility attached to officers of units in regard to the preservation of the health of their men. The medical officer's part is, I think, that of educating officers, non-commissioned officers, and men in regard to sanitary principles, and in the practical application of sanitary methods; but if the best results are to be obtained, the regimental officer must also do his part. He must consider it his duty to pay careful attention himself

to sanitary details, and he also must use his personal influence in regard to the sanitary training of his men, gaining their ready obedience to the observance of sanitary rules, and impressing upon them that the efficiency of the corps in the field is intimately related to the maintenance of a sound state of health of the men composing it. Disease hampers an army by the loss of numbers, by causing it to lose mobility, by taking up transport which could be more advantageously employed; and disease adds enormously to the cost of war, as the men lost or disabled have to be regularly replaced. Apart, therefore, from the humanitarian point of view, the prevention of disease is of the utmost importance in relation to the success of troops in the field, and the general who is able to maintain sound health conditions in his army is also likely to win most battles. The question of the prevention of disease is consequently of the utmost importance to every practical soldier. Sanitation, in its broadest sense, may be summed up in one word—cleanliness. All sanitary measures are based on the necessity for systematic removal of refuse matter and excreta. We aim at preventing the accumulation of such matters—conditions which must occur wherever men are gathered together, and particularly when the aggregation takes place within limited areas, such as camps on field service. A camping ground to begin with may be clean, and in such circumstances the health of the men will not suffer from sanitary carelessness until some time after occupation. In the very best looked-after camps some organic pollution of the soil is inevitable, but if sanitary matters are neglected, unhealthy conditions are rapidly established, and such diseases as dysentery and enteric fever exact their toll. A good sanitary state in a camp depends on the exercise of care by the individuals living in it. The men should, therefore, be trained in sanitary methods in time of peace just as they are trained in drill, in shooting, and in field work. A man becomes a trained soldier, as far as the use of his weapon is concerned, by constant practice and by going over the same ground again and again until he becomes proficient. In the same way he will only gain a satisfactory knowledge of sanitary principles by receiving instruction which is repeated again and again, and instruction in field sanitation should form part of his annual field training.

Captain J. BOOTH CLARKSON (late 3rd Bn. Royal Fusiliers):—Confirming the recommendations of Major Goodwin, to the effect that it would be a very useful thing to have a sanitary corps which should have charge of the sanitary apparatus, I may mention that I was told by the United States Medical Officer, only about three weeks ago, that not very long ago they had to issue an order against the use of the Forbes-Waterhouse apparatus in the latrines, not because it did not work quite satisfactorily—it did when it was properly managed—but owing to the fact that they found the men did not understand it, and therefore it was more of a danger than a safeguard; but after a certain number of men were trained to use it properly, another Army Order was issued to the effect that it should be used. With regard to the question of training officers and men in regard to sanitary matters, I think that, nearly up to the present time, one of the great reasons that we have not been able to get them to take an interest in it has been owing to the fact that we have not had very good results to show; but now that we can point out what Major Goodwin has mentioned, that in the South African War we had 41,000 cases of enteric, whereas the Japanese army in their recent campaign only had 193, we are likely to make more progress. In addition to that, we can point out the results

in Havannah, where, under the orders of General Leonard Wood—himself at one time the medical officer to Major ———, in charge of the United States Medical Department—yellow fever has been stamped out. Yellow fever was tackled on the lines indicated by the Commission presided over by Major Read, *i.e.*, the mosquito being exterminated, with the result that a couple of years ago there was not a case of yellow fever in Havannah, for the first time in a hundred and fifty years. What would happen if an army that was in the sanitary condition of our army had met a Japanese army in their sanitary condition? There could be no doubt about the result. Although military reorganisation has not gone as far as we should like to see it go, it has progressed considerably, especially since the days of the pocket-book observation that a doctor's advice was very good—when it was asked for.

Major T. H. A. C. GOODWIN, D.S.O., R.A.M.C., in reply, said:—With regard to Colonel Davies' remarks, I have nothing to say, because he was good enough to agree with me in everything. As to Mr. Dowding's suggestions respecting the general health of the men, I do not think that any instructions as to the food men should eat, or regarding their clothing, etc., which I presume are the measures referred to, will be of any avail unless the details as to sanitation are understood and carried out by them. To my mind, that is the most important point of all. There is no reason why "bully beef" or any other food, if uncontaminated, should cause severe diseases; it may produce diarrhoea or dyspepsia, but it cannot cause enteric fever. Enteric fever can only be contracted through defects in sanitation. With regard to the question of alcohol, I have mentioned it in my paper, but I did not refer to it when giving my lecture. I do not know what Mr. Dowding's views are on the subject, but I have put mine in the paper. I am strongly against the use of alcohol, unless under exceptional circumstances. I think the habitual use of alcohol is a very great mistake. Certainly it is useful at times; for instance, after long marches when the men are fatigued and exhausted, but I think that as a rule it is productive of more harm than good. I think the habitual issue of alcohol in cold weather is certainly harmful; it induces a feeling of warmth because the surface of the body is flushed. The person feels warmer, but that simply means that so much reserve heat is lost by evaporation, and the body is then less fit to combat the cold. I think those are the principal points regarding alcohol which I mentioned in the paper. As regards simple remedies which the soldier can carry, I do not think that such a measure would be very practicable. My own experience of the gentleman cadet at Woolwich is that one has to be very careful as to what simple remedies one gives him. If a doctor gives him something for external use, say for application to his knee, unless the cadet is very carefully instructed, he will probably try its effect on somebody else's throat, or internally on himself, and I think it is very much the same with the soldier. He does not understand the possible danger of the drugs with which he is dealing. Even if such a measure were practicable, I am not acquainted with any simple remedy which will either prevent or cure enteric fever or dysentery. With regard to Major Elkington's remarks, I am very glad indeed to hear that my idea was correct as to the new pattern water-cart having been successful. I heard that it promised very well, but I did not know that the results had been so very satisfactory as appears to be the case. Major Elkington also said that specially trained men were not necessary to ensure the efficient working of the cart, but he mentioned afterwards

that one man was trained in the subject. That, I think, is a proof of my contention that one man, at all events, should be skilled in the matter, and that the apparatus should not be handed over to the ordinary man, who was not trained as to its mechanism. Colonel Altham spoke of the very great difficulty of transport. I fully appreciate and understand the force of his remarks, and it was principally for that very reason that I thought that boiling water would in future be the more effective method at the base and on the lines of communication. At the front I think filtration is the better method, because it can be more easily carried out, while involving a much smaller amount of transport. Colonel Sim spoke of boiling the water and as to the alternative method of raising it to a temperature of only 190° instead of to the actual boiling point. He asked if that was effectual. It is so, but I did not mention it because I thought it rather complicated matters. Such a method is all very well at the base and where big installations can be erected and thermometers used, but I think as a general rule that the efficacy of sterilisation by heat is open to doubt unless the water is boiled. If it is boiled for a minute, or even two minutes, the water does not lose all its dissolved gases. With regard to the question of purification by chemicals, owing to pressure of time I omitted to touch on this point, although I have mentioned it in the paper. There are various means which can be adopted for the purification of water by chemicals. I do not think that, as a rule, they are very practicable on active service. There are many difficulties in the way; but, at the same time, I do think that there is scope, and ample scope, for their employment in the case of small bodies of men, such as picquets and scouting parties. The best method I have seen is that of Vaillard, in which the water is purified by the action of free iodine, which is subsequently neutralised. The materials for carrying out the process are very easily carried on the person, and I think the method would be found useful for small bodies of men at the front. Mention was made of the employment of paraffin oil as a specific against the bites of mosquitos. I tried paraffin oil myself in India. It is all very well when you can apply it frequently to the exposed parts, such as the hands and face. It then certainly does keep off the mosquitos, but the oil has to be constantly renewed; and when you remember the fact that the *Anopheles* mosquito feeds throughout the night, I think you will see that paraffin oil is not very effectual. When one goes to sleep the paraffin soon evaporates, and the *Anopheles* mosquitos will then bite as freely as before. I found that in India in the case of the ordinary mosquito (the *Culix*), paraffin oil would keep them off for an hour, and then they got as bad as ever. I was very glad to hear one remark, namely, that the non-commissioned officers were so interested in the care of sterilisers and other apparatus. I think that is most important and encouraging, because the non-commissioned officer has a very valuable influence. He gets hold of the men under him and sets an example, and can effect very good results indeed at very little cost to himself or anyone else.

The CHAIRMAN (Surgeon-General A. Keogh, C.B.):—I think we have had an exceedingly interesting discussion on this paper, and that I have been left very little to say by way of summing up what has been mentioned. It is a source of some regret, to me at all events, to find that the majority of those who are here are medical officers, and that the combatant branch of the Army is not very well represented; but one is consoled by the reflection that this paper will be read throughout the

Service, and we hope it will have the effect which it undoubtedly deserves. I think the paper is an exceedingly valuable one. Major Goodwin has been very moderate in the statements that he has made. He has touched upon most important matters which should occupy the attention of the combatant officer. Of course, as he said, he does not expect the combatant officer to be an expert in sanitation; he only requires him to appreciate the fact that sanitation has now, and has had for the last twenty years, a scientific basis. Perhaps I may be allowed to express my own opinion on one or two points that were mentioned. Personally, in the strict sense of the term, I do not believe in a sanitary corps, because it would be a mistake to relieve units wholly of their sanitary responsibility, and if we had a branch of the Army dealing with nothing but executive sanitation, in all probability sanitation would very soon pass out of the domain of the battalion. I hold very strongly that a battalion must safeguard itself. I also hold that it is possible within the *personnel* of a battalion to adopt all the measures—provided the officers and men are educated as to the necessity for these measures—which are necessary for the sanitary salvation of the battalion. But if we come to consider the conditions which prevail at the base and on the lines of communication, then I do not think the principle that the sanitary salvation of a battalion depends upon itself will help us in the least, because, as a matter of fact, on lines of communication and at the base we have no permanent battalions. Sanitation must there be preserved by a permanent *personnel*. If Major Goodwin means by a sanitary corps bodies of men of the Royal Army Medical Corps, who are trained, educated, and used for nothing else (because I always hold sanitation is a subject which requires constant and unremitting attention), if these men are used for nothing else on lines of communication and base, then one can understand what he means by a sanitary corps. I hold that if we were able to translate into practice these views the Army would enormously benefit. Of course, Colonel Altham was quite right. There is no doubt whatever about it that, after all, soldiers go to war to fight and win battles, and in a humanitarian sense they do not care in the least about sick and wounded and all that sort of thing; why should they? That is our business; but we hold that this is not a humanitarian question at all. This is a case of the fighting and the winning of battles. For the moment, let us say, we do not care about sick and wounded; we still have a very important function in war, and that is the preservation of the army from disease. If, as Colonel Altham says, we are going to inundate an army with more transport, more *personnel*, and so on, it becomes a question whether the game is really worth the candle. Personally, I think that is a matter which the combatant officer must decide. We have the greatest sympathy with the commander in the field. He is suddenly called upon to receive, in addition to the enormous establishment given to him for the care of the sick and wounded, another establishment for the prevention of disease. In time it is not difficult to imagine that the transport for the prevention of disease and for the cure of the sick and wounded would almost equal the army for fighting purposes. No, I hold that if it be true that sanitary science can prevent disease in war, the combatant officer is entitled to say then: "If these measures are going to be so successful as you tell us they will be, you should reduce the numbers of your hospitals, the large *personnel* which you threw into the field, and show us that practical results in military operations are likely to follow these sanitary proceedings." I think he is perfectly right there. When you come to consider that if we go to war we

should have to make arrangements for 10 per cent. of the force finding itself in hospital in the first few months of the campaign; that means with an army of 140,000 men, that you require a medical corps 10,000 strong. I think it ought to be possible, if there is anything in the sanitary question, to reduce the 10,000 people that we send out to look after the sick and wounded (which, after all, is of no interest to the combatant officer—I speak from the point of view of the combatant officer, of course), and that undoubtedly the demand to reduce that large establishment is very well founded. That, I take it, was the meaning of Colonel Altham's remark, and it is a very sound and sensible remark, too. I cannot criticise at the present time the many other interesting questions that have been raised in connection with the matter. In stating my own view as to the formation of a sanitary corps, I feel there that, in the main, I am in unison entirely with Major Goodwin. The paper, as I have said, is of very great value, and one hopes that through the medium of this great Institution it will find its way throughout the Service, that it will prove to be a means of educating the Army in this great and important question, and that perhaps it will enable us medical officers to push forward the great cause that we have at heart. Before I close I should like to ask you to pass a hearty vote of thanks to Major Goodwin for his most interesting and excellent paper.

THE USE OF THE MOTOR CAR IN WARFARE,

By HUGH H. PAYNTER,

late R.N., Captain Motor Volunteer Corps.

Monday, 20th November, 1905, at 3 p.m.

Major-General A. H. PAGET, C.V.O., C.B., Commanding 1st Division
Aldershot Army Corps, in the Chair.

I RECENTLY saw a picture in an American paper which was headed: "If Nero had only known." It depicted a Roman arena in which, in the place of wild beasts, motor cars were employed. These were provided with projecting spikes, and the unfortunate victims were run down and destroyed by this means, as indeed might have been done in those times, "if Nero had only known"; and the thought occurred to me: "What would have happened if Caesar had only known?" and what a different account we should have read in that excellent work which we have all of us studied, at any rate in our younger days, which commences with the information that "All Gaul is divided into three parts," if that great general had had at his disposal motors in the numerous campaigns which he conducted against the greater portion of the then known world.

In addressing you on the subject of "Motor Cars in War," I propose to confine my remarks to comparatively light motors, and do not propose dealing with those vehicles which are suitable for heavy draught purposes. And here I am labouring to a certain extent at a disadvantage, inasmuch as, although in our recent wars a great deal of use has been made of self-propelled vehicles in connection with transport work, and a great deal of experience gained, no nation has yet employed light cars to any appreciable extent in actual warfare.

A great deal of interest has, however, been awakened within the past two years on the subject, and there is no doubt that in any future wars motor cars will be employed to a very large extent.

It will therefore be evident that I can only tell you very little as to what motors have done in actual warfare.

All I can do is to give you some account of the uses to which they have been put in recent manœuvres, and discuss, with the aid of the experience thus gained in times of peace, how far they are likely to be practically serviceable on the field of battle. I propose also

to point out some of the purposes for which motor cars will probably be employed, and to consider what is likely to be the best type of car for military purposes.

A very few words will suffice with regard to what has actually been done with motor cars in war. As far as I am aware there were two small steam cars used in the field in South Africa: one of these by General French, and the other by an officer in the Royal Engineers. Both did good work, and the latter was provided with a trailer carrying a search-light, the engine of the car being used to drive a dynamo which provided the current when the car was at rest. I have also seen it stated that General Linievitch has been using a motor in the Far East; but, with these exceptions, I do not know of any instance in which light motors have been employed in actual warfare. In peace times, however, and especially in manœuvres, matters have been very different, many cars having been employed in the operations carried out in England during the past two years, and the daily use of them for military purposes is greatly on the increase.

Now, it is interesting to note that whilst the heavy motor traction has been handled by the Regular Army, the greater part of the light car work has been done by Volunteers. It will therefore not be out of place to refer to the history and work done by the Motor Volunteer Corps. In June, 1903, the Motor Volunteer Corps was formed by permission of the authorities and by the exertions of Colonel Mayhew. It was unique in being the first of its kind in the world, although the example has now been followed to some extent by several Continental nations. Germany, Italy, and Austria have each started a Motor Volunteer Corps. The former nation has at present about 40 cars, and they are specially interesting in being the only Volunteers in the German Army.

The idea was that there were a large number of gentlemen in England who owned motor cars and who were sufficiently patriotic to be willing to place them at the disposal of their country in time of war for military purposes; and that in order that the best results should be attained, it was advisable that a corps should be properly organised to be used for manœuvres, etc., in time of peace, and to be available in time of war for any purposes for which it might be found suitable.

A regiment was accordingly formed under the name of the Motor Volunteer Corps. A certain amount is paid to each member when on duty, and a certain minimum amount of duty is required from every member of the corps in the course of each year. I need not exactly detail the terms, but I think I may say that whilst the officers and members give their services readily, the country has secured a very good bargain, as it has at its disposal a first-class fleet of motors, with competent drivers on terms far less than those charged for the hire of cars from ordinary private sources.

The Motor Volunteers have now taken part in large numbers in the manœuvres since 1903; but in addition to this work, the cars have been, and are to-day, in constant regular work.

I will give you some figures, which will, I think, be of interest to you with regard to the work done during the year ending 31st October, 1904.

During this year the total distance travelled by cars on duty was 82,406 miles, and by motor cycles 25,152 miles, giving a total of 107,558 miles travelled on military duties by the corps, being an average of 293 miles per day.

These duties consisted of the manœuvres, during which a distance of 34,816 miles was travelled on duty, and, in addition to this there were:—

- 32 Staff rides.
- 35 inspections.
- 27 confidential tours.
- 7 tactical examinations.
- 7 Royal visits and inspections.

In addition to other incidental duties.

I have already mentioned that the corps was first formed in June, 1903, but although work started from that date, it is perhaps in the manœuvres which were held that year that the officers and members may be considered as having made their *début* as assistants in the Army. This is also the first instance in which motor cars have been employed on anything like a large scale in military operations.

The manœuvres took place in Wiltshire, the headquarters being on the hill above Marlborough, on the borders of Savernake forest, whilst the motor cars of the corps were quartered for the most part in the town itself, although some cars and motor cycles were attached to the different forces and moved with them.

A total of 35 motor cars and 19 motor cycles were employed. The cars were of all kinds, ranging in power from 70 to 4½-H.P., and included many very fine motors.

The duties were numerous and varied.

As to the cycles, these were used exclusively for carrying messages and despatches, some of the motor cyclists being always on duty night and day at the Headquarters Camp, ready to be despatched at a moment's notice, and they were often sent out in pairs, so that if by any evil chance one of them met with a mishap the other might be able to carry out the duty. To a certain extent the cars were also used to despatch work, and I well remember on one occasion, when, owing to all the cycles being employed, it was necessary to send cars to take their place, spending a whole night on this work.

For the most part, however, the duty of the motor cars was to carry Lord Roberts and his Staff, the umpires and the foreign military attachés to the various points where their duty required their presence.

The whole undertaking was experimental. It had never been done before. The roads were bad, being considerably cut up by the transport, and driving was by no means easy, owing to the constant passing of large bodies of troops, to whom, I fear, the cars were rather a nuisance; but although many prophesied failure, the opposite was the case.

The foreign attachés were enabled to traverse distances and to witness the manœuvres in a complete manner, which would have been impossible by any other means; and, for the Regular Staff, the operations assumed quite a different complexion to that of previous years.

The umpires were enabled to carry out their duties with less fatigue and in a more efficient manner than had hitherto been possible, and Lord Roberts and his Staff made the fullest use of the cars with very satisfactory results.

Instead of having to ride a long distance in the morning to the scene of action, horses were sent on to await them at the point

selected; motors conveyed the Staff there in a very short space of time, thus enabling them to start at a much later hour. An exchange was sometimes made to the horses, the cars being sent to await their passengers at another point. On other occasions the Staff remained in the cars all day, and in either case, at the end of the day a return home was made in the motors, the camp being thus reached at a comparatively early hour, when the orders, etc., for the following day were prepared and despatched to the different officers concerned in good time.

Lord Roberts, at the conclusion of the manœuvres, at his inspection of the corps, said, in the course of his remarks:—

“I wish to tell you of the great assistance you have afforded throughout the manœuvres; in fact it would have been quite impossible to have carried them out without your assistance. Everything has been delivered with punctuality and speed. I have not heard of a single failure.”

Now I do not pretend that all this work was carried out without some difficulties and misadventures. The corps was young and inexperienced in military matters. Punctures were by no means infrequent, but actual breakdowns were very few, in spite of the fact that the roads travelled over were exceedingly bad, being often mere tracks on the downs. It would appear, therefore, that one is brought to the conclusion that as far as peace manœuvres can foreshadow, what would actually occur in war time, motors are exceedingly practical, and, indeed, indispensable to any modern Army in the field.

The Motor Volunteer Corps had plenty of work to do in 1904, and in September assembled to the extent of 31 cars and 25 motor cycles at Colchester for the Essex manœuvres.

The work here was unquestionably lighter than in the previous year. The roads were distinctly better, and less distances were traversed, but the total mileage came to a fairly substantial figure, being, as already mentioned, 34,816 miles.

The landing of the invaders took place at Clacton-on-Sea, and they then advanced into the country, and occupied many important positions, being, however, eventually driven back to the coast, and compelled to take to their ships.

The fighting took place mainly around Colchester, and between that city and Clacton. The distance between these places is 16 miles, and the advantage of motors in point of speed was here very strikingly shown, as a journey of this length was of course a trifle for a car, and it was the experience of many members of the corps, who were constantly running between the two places, to overtake cavalry on the outward journey, to pass the same men on the journey home, and then to overtake them once more on the second outward journey.

The general work consisted, as in the previous year, in the transportation of the Director of Manœuvres, the umpires, Staff officers, etc. Punctures were not so frequent on account of the better roads; breakdowns were practically non-existent.

The cars were not nearly so much impeded by long trains of transport as in 1903, and no complaints were heard as to the annoyance caused to the troops by the constant passing and repassing of the motors. This improvement was probably due to the fact that most of the cars in 1904 were provided with flexible 4-cylinder engines,

which made it much easier to drive them slowly, and, of course, a good deal of experience had been gained by the corps generally.

An experiment was made in arming the corps to a limited extent, but it can hardly be said to have met with much success. From the fact that the greater number of cars were engaged in carrying umpires and other non-combatants, any arms carried by the cars themselves could not be used, and therefore "fighting" was confined to the motor cyclists.

To some of these rifles were issued, but they were found to be exceedingly inconvenient to the riders, it being difficult to arrange to carry them, whilst in the event of a fall, were a source of considerable danger if carried on the back.

At the conclusion of the manœuvres H.R.H. the Duke of Connaught was good enough to express his satisfaction at the work done by the corps. During the present year a great deal of work has been done, and although manœuvres have not been held on such a large scale as in the two previous years, and therefore the number of cars employed at any one time has not been so great, still there have been regular and constant calls for their services. A total distance of 88,929 miles has been travelled by the corps on duty during the eleven months ending the 30th September, 1905, and there is no doubt that the military authorities are fast coming to consider motor cars as an indispensable means of locomotion, without which no Staff ride, inspection, or military operation of any kind can be carried on.

Such, then, is a brief account of what has been done during the past few years, and if I have dwelt rather fully on the Motor Volunteer Corps it is because their cars are far more numerous than those in the Regular Service.

Now, it appears to me that in considering the work done in peace time, one is inevitably brought to the conclusion that motor cars have proved themselves to be speedy and reliable—two qualifications which are very essential in any vehicle intended for military purposes. I think, therefore, that their use in actual warfare is likely to be seriously tried on the next opportunity, and it will therefore not be out of place to consider to what uses the cars are likely to be put, and to what extent they can reasonably be expected to carry out the duties entrusted to them.

Now, the tendency of modern warfare is to scatter troops over largely extended areas, and the necessity of providing a rapid means of communication between the different units, and for purposes of reconnaissance is of ever-increasing value. For time is a very important factor in war; and it is here especially that I believe motors will be found valuable, and, indeed, indispensable.

The motor is essentially a fast conveyance, capable of travelling at a speed three or four times that of a horse, or even more, for in war there would of course be no speed limit. Unlike a horse, it does not require resting, but returns from a long journey ready to start again at once; and further, the car has the advantage of being independent of the country through which it travels, carrying its own supplies for a very good distance—say 200 miles. Despatches can be rapidly delivered, and replies equally rapidly brought back, and the Commander-in-Chief is thus enabled to keep in touch with widely-separated branches of the force under his control. He is also enabled to visit and personally inspect positions which would be otherwise inaccessible to him; and further, he will often be enabled to

spare from his side an important Staff officer whose presence at some point is urgently required, and whom the Commander-in-Chief might hesitate to send, were it not that, thanks to the motor, he knows that he can rely on his speedy return.

All these facilities are available to commanders of brigades and divisions, who are thus enabled to multiply themselves, and to personally visit, if necessary, the different points in the wide area of the scene of their operations. Incidentally, the motor possesses the great advantage of affording rest—at any rate, to some extent—to its passengers; and this appears to me a very important point, as officers will arrive at their destination fresh, and able to devote their best energies to the work which awaits them, instead of being tired and jaded after a long ride on possibly a tired horse. Furthermore, they are able to discuss matters and examine maps on the way to an extent which would otherwise be impossible.

So much for the more obvious uses of the motor in war, namely, for transportation purposes; but there are many other uses which suggest themselves. It is, perhaps, a debatable point whether for the actual conveyance of troops motors will ever be used to any great extent; but a comparatively small body of "motor infantry" would, on account of its extreme mobility, form a very valuable force, capable of travelling rapidly, and with the great advantage of arriving fresh at their destination. An interesting example of this occurred in the recent Austrian manœuvres. A bridge of great strategic importance was threatened by the enemy, and the cavalry of the defenders was too far off to get there in time. Motors were therefore used, which brought up men and guns, covering a distance of 19 miles in 52 minutes, who succeeded in holding the bridge until the arrival of reinforcements. Certainly a motor affords a rapid means of bringing up ammunition, and could readily be employed for ambulance work in conveying the wounded to the rear.

For field telegraph work the car appears to be particularly suitable, and it could lay and pick up a wire far quicker than is at present done by a horse-drawn vehicle, and doubtless in the future we shall see wireless telegraphy motors.

I do not wish to trespass on to the ground of traction, but I think that light motors might readily be adapted to the transport of light guns. These should be mounted on trailers, so that when in action the motor car which drags them might take cover where possible. In bringing the gun into action, the car itself would of course be exposed to the risk of damage, and might be disabled; but this is a risk which would equally apply to horses or any other means which might be suggested for the transport of the guns in question, and there seems no reason why the motors employed for this purpose should not be protected with shields. Weight is of course a consideration, but a reasonable amount of protection could be provided.

I remember well what was, I believe, the first armoured train ever used. That was in Egypt in 1882. The armoured motor will doubtless find a place in the war of the future.

We have already heard of one instance in actual warfare in which a car has carried about and operated a search-light, and I might go on for some time suggesting uses for which motors might be employed, but I think probably at this stage some of my audience

may be inclined to consider that I am wandering somewhat into the realms of Utopia, and am neglecting the practical side of the question.

The principal objection usually urged against the employment of motors for military purposes is that they are dependent of necessity to a great extent on the existence of roads, and, that even if we suppose the existence of these, then that they can easily be held or destroyed. Now, this is of course quite true, but it must be borne in mind that roads exist in most parts of the world, and that, although the motor may not be a first-class cross-country conveyance, it can often go round by road to the desired spot, and although it may have to traverse a much greater distance, it will in many cases get there quicker than a horse going across country. Prolonged cross-country journeys are neither desirable nor, indeed, practicable, but should the occasion arise, a motor is quite capable of making a brief excursion across ordinary ground, and should thus be able to make a detour, and so avoid any particular portion of a road which might be, for the time being, undesirable.

The passage of any Army along the best road that has ever been constructed, with its guns, transport, etc., will cut it up to an extent which has to be seen to be properly appreciated, and it might be argued that on a road which has been practically ruined in this way a motor would be useless. I do not think this would be the case. Progress would be slow—undoubtedly slow—but the same would apply to all wheeled transport, and, indeed, to horses and to troops themselves; but a strongly constructed car with plenty of power can accomplish wonders over the most unfavourable ground when in skilled hands.

The motor car can therefore, I think, be reasonably expected to get to its destination, as far as roads are concerned, provided it does not break down. Now what are the chances of the car failing? In the early days of motoring doubtless it would have been a different matter. The cars were not what they are now; also they were not so generally understood, and a few years ago if one succeeded in driving a car for 100 miles without a stop it was considered a remarkable achievement. Nowadays this has all been altered. I consider that the reliability of the modern car in anything like skilled hands is extraordinary; indeed, I am inclined to go further, and to say that the reliability of the motor of to-day, when handled by the extraordinarily ignorant and incompetent people in whose hands we see valuable and powerful cars, is little short of marvellous.

Each year makes the public better acquainted with mechanical appliances, and I think that there is small room for doubt that in the future, it will be just as much part of an officer's ordinary education to understand a motor car as in the past it has been part of the education of a cavalry man to be able to ride a horse.

We have seen something of this advance of mechanical knowledge in the sister Service, the Navy. The naval officer of the past was a seaman, but very unscientific. To-day a knowledge of engineering is no small part of his training, and the naval officer of the future will, according to the programme at present laid down by the Admiralty, be not only able to take charge of the ship on the bridge, but also to handle the engines, electric lighting, and hydraulic machinery, and will, in fact, have a good working knowledge of any portion of the complex system of machinery which goes to make up the modern battle-ship, all of which was in the past considered as

the exclusive realm of specialists. Is there any reason why something of a similar kind should not obtain in the Army of the future?

When we arrive at this stage the motor car will have no mysteries, but be part of the daily life of the ordinary Army man.

By that time, too, probably the ideal tyre will have been discovered; the tyres at present are the one weak point of a modern motor, and are certainly the greatest cause of involuntary stoppages on the road.

In a car required to travel at a high rate of speed some means must be adopted to absorb the blows given to it by the unevenness of the road surface. In the ordinary vehicle, drawn by a horse at a slow speed, good springs are all that are required. In motors running at a moderate speed indiarubber tyres, in conjunction with good springs, meet the case; but when we get to high speeds these are not sufficient. Pneumatic tyres are usually employed, and so far nothing has come into practical use to take their place, although some forms of spring-wheel with solid tyres are in the experimental stage, which may, and I hope will, be the solution of the difficulty.

The pneumatic tyre has the great disadvantage that at any moment punctures may occur. There are many devices for preventing these. Bands can be applied to the tyres, although these have disadvantages, nail pullers can be provided, etc., but still the danger always exists that a puncture or a burst may occur. In war, where absolute reliability is essential, it would appear at first sight that no tyre which was capable of being punctured should be used.

Now the evils of the pneumatic tyre are many, but they have this great redeeming feature: they can always be put right on the roadside in a short space of time. Should a pneumatic tyre give way, and should it be impossible to stop, as might be the case in war, the car *can* go on. The speed will not be so great, the occupants will be uncomfortable, the tyre will be ruined, and if the car is driven far on a deflated tyre at any speed something will probably be injured; but still, the car can go on for a reasonable time, and that seems to me the great point. Now for a military car you must have speed. If you use pneumatic tyres you will have troubles which can be got over, and if one or even two of the tyres fail, you can, if absolutely necessary, run on, and you will not be very much worse off than if you were on solid tyres; on the other hand, if you use solid tyres at any *speed*, you will expose the car to such a series of shocks that at any time on a bad road you may find yourself with a broken wheel, or some portion of the frame of the car itself, or the engine may give way, which will defy the skill of the most experienced roadside repairer.

I think therefore that with our present knowledge, pneumatic tyres, with all their attendant evils, will have to be used in military motor cars; but I think the pneumatic tyres might well be supplemented by solids carried on the same wheel, so that in the event of a puncture the solid tyre could come into action.

Let me now briefly consider what is likely to be the best type of car for our purpose. Will a steam car or one with an internal combustion engine be most suitable? I think the latter, and for this reason: that it is essential that the car should be capable of being instantly started at any minute; and further, that it should have a large radius of action. Steam cars require an appreciable number of minutes to get under way, and are restricted in the

distance they can travel to the capacity of their water tank. This must necessarily be limited, and the distance which they can travel without calling for supplies may be taken at about half, or even less, of that of which a petrol car is capable.

The ideal car should not be restricted to petrol, but should be capable of running on any of the common forms of paraffin which are sold everywhere all over the world. If this can be arranged, a great advance will have been made in the solution of the problem of motors for military purposes. Unfortunately, so far, although many inventors have come forward with paraffin carburettors, there is not one, as far as I am aware, which is a practical success. They all succeed up to a certain point, and there they fail. It is, however, in my opinion, only a question of time, and I believe in the future we shall have a car fitted with an internal combustion engine capable of running either on petrol, paraffin, or other fuels.

In general design I believe the car should be a fairly large one, capable of seating four besides the driver, fitted with a 4-cylinder engine of at least 20-H.P., and provided with four gears, the top one giving the car a speed of forty miles an hour, and the lowest gear being one which would enable the car to take its full load anywhere. When I say "anywhere," I mean anywhere on roads; but circumstances may arise when the car is not on a road, and its wheels may become embedded in some rut or bog from which no effort of power transmitted to the wheels will free it. To provide for such a contingency it would be well for the car to be fitted with a drum which could be put into gear with the engine. A rope attached to some fixed object could be brought round this drum, and the car could by this means get once more on to a surface on which the wheels could drive. The whole of the machinery should also be carried higher from the ground than is usually the case at present, so that the car would be able to negotiate deep ruts and to pass through a reasonable depth of water.

With a car such as I have briefly described I believe good work can be done, and that warlike operations will, thanks to motor cars, assume an entirely different complexion in the future. I have said "*I believe*" that this will be the case, and that is all that the greatest enthusiast on the subject of motor cars can say at present. Some day, doubtless, someone will be able to speak with authority from actual experience, and instead of hearing suggestions of what motor cars may do in war time, you will hear an account of what they have actually accomplished. When that day comes I venture to predict that the motor car will have proved itself as indispensable in war as it is to-day in peace time.

Major F. LINDSAY LLOYD, R.E. :—In thanking Captain Paynter for his lecture, I think we owe a great deal to the Motor Volunteers for having assisted the Regular Army in the very much more rapid development of the military use of the light car than would have been at all possible had we had to depend entirely upon the grants that the Treasury might allow us to put into the Army Estimates from year to year for the supply of purely military motors. One thing which I think comes out strongly in the lecture, and which we ought to consider seriously, is that motor cars have hardly ever been used for fighting purposes, even in manœuvres. They have been used, and have been of the very greatest value in what I may term the peace side of manœuvres, for the staff work

which is necessary to enable the manœuvres to go on, and to let the combatants know what has been the probable result of the work they have been doing in default of the real bullet and the real shell, which would tell their own story. And consequently I think the first thing we have to do, in order to find out how we can use motor cars in real war, is as far as possible to employ those motor cars, even though we may not at the moment know how to do it well, as a portion of the fighting units in peace manœuvres, and until we do that I do not think it is very much good for us to consider the use of motor cars for the fighting line—armoured motor cars or motor cars, as I had it suggested to me—to bring up ammunition or even water to the men in the firing line. I think if we begin to think of the motor car from that point of view we are thinking of them the wrong way round. We have to think of the question first of all from the point of view of the road; and when we have developed and know how to use motor cars for road purposes, then the development from the road to the field and to the front line will come; but I do not think we must begin at that end. As Captain Paynter clearly puts it, the age is undoubtedly becoming mechanical, and officers are becoming more mechanical; but I do not think military motor cars will ever be able to be used as a real fighting machine until the officers who use those machines get into sympathy with them. I am now speaking more of the Army cars than of those belonging to the Motor Volunteers, because in the Motor Volunteers the officers who drive the cars for the use of the generals and staff officers have themselves the knowledge and the sympathy with their cars that is necessary; but when you have the Regular soldier driving, who probably is not a very highly-trained man, it is then essential to the proper use of the car that the officer whom he is driving shall himself be in sympathy with his car and with its mechanism, and shall also discipline and control the man who is working under him. I am afraid there is a little tendency just now for the car to be considered rather in the light of a useful and powerful livery stable cab, which arrives at the hotel or quarters of the officer who is going to use it. He uses it all day, and it goes away at night and is no more thought of until it comes upon the scene next morning. If the officer on board was in sympathy with the mechanism of the car, that feeling would, to a very large extent, be eradicated. Such sympathy is necessary, I maintain, when we use motors for military duty. As the age becomes mechanical that will become a natural feature, and the sooner the age becomes mechanical enough for an officer to understand that point the sooner shall we get on in the use of the motor. To turn to technical details, I must say I am entirely in accord with what Captain Paynter has said on the subject of tyres. We have tried and failed in the use of solid tyres, and I am not very hopeful, at present anyhow, of the result of the spring wheel. The improvement of the spring wheel means the improvement of the springing between the wheel and the body; but what we want is an improvement in the reduction of the work and trouble between the road and the wheel, and as far as one can see at present that can only be done well by the use of pneumatic tyres. I think we shall see—in fact I think we are seeing, undoubtedly—the rapid advance of the pneumatic tyre as a more reliable and serviceable article. There is one other point that I think we must take much more seriously than we have ever taken it before. It is a point the author has touched upon when he speaks of it as necessary for the ideal car. I go further and say that there is one absolute necessity for any military car used in warfare, and that is, the use of petroleum

instead of petrol as fuel. Until we get the petroleum carburettor, until we can absolutely depend upon petroleum as a fuel for our internal combustion engines—because I am with the lecturer entirely on the subject of internal combustion as against steam—until that day comes, we can never depend upon the use of our cars in actual warfare. Petrol is of such a nature that its carriage and storage to anything like a distance from the main base is almost an impossibility; it has to be very carefully stored, and a leakage is so dangerous (it is very much more dangerous than powder) that petroleum, or a much less volatile spirit anyhow than petrol, will have to be employed. I am glad to say that we are advancing, and advancing rapidly—I think perhaps more rapidly than the author has any idea—in the development of the petroleum motor. During the whole of this summer we have had a motor at work entirely on petroleum. I admit at once that it required careful driving, and that it required a man who knew perhaps more than an ordinary motor car driver to get it along, but it has been run, and run successfully, and without any real trouble except with regard to the knowledge of the man who drives it. We are now advancing, and at the present moment we have under trial several other petroleum carburettors, one of which particularly is giving the greatest promise, and which I think is likely to be successful. I hope everybody who has the subject before him will not consider that, because he has got petrol he has got all that is wanted, and will bear in mind that it is essential to have a less volatile spirit if we are to seriously use our cars away from a civilised country, or even anywhere where war is being carried on.

Colonel the Right Hon. Sir JOHN H. A. MACDONALD, K.C.B. (Hon. Colonel The Motor Volunteer Corps:—This is a subject in which I have taken a very great interest for a considerable time, and, as some of my friends know, I have pressed it, when occasion arose, on the attention of those who are interested in motor cars. It is quite true that we are merely on the threshold of the subject, but I hope that will not deter us from having some imagination in the matter. It is generally the enthusiast who suggests something that is believed to be impossible, he himself believing it to be scarcely possible, who succeeds ultimately in bringing out what constitutes success; and we have only to look at the books of the late Jules Verne to understand how it is that a man may describe things that are like fancy fairy tales, many of which have soon been exceeded. And this is particularly true in the matter of the power vehicle itself, which Jules Verne practically described in one of his tales. Therefore, I think we have to thank the lecturer for giving us very good guidance in the direction in which we should go. I must say I deprecate myself there being any doubt upon the question about the power vehicle being practicable and practical for war purposes. It may not be so at the present moment, but a vehicle moved, as we can now move it, by the aid of an explosion engine, must ultimately come to be of the greatest possible value in war, not merely for the purposes of taking generals and umpires about at manœuvres, not merely for the purpose of transport, but also, I believe, for purposes of the combat itself. And I allude particularly to what ought to be before all the citizens of this country—war in our own country. We have two things to do: The first is the one which we ought to do with success, because if we do not, the second will probably be of very doubtful success. We have to keep an enemy from landing in our country; but if he ever gets there we have got, as the second thing, to turn him out. The

second might be work of enormous difficulty, and therefore all our attention should primarily be devoted to the first, in the absolute certainty that if we work hard for the first, that is the only thing that will give us the chance of succeeding in the second, if we are driven to it. I want people to realise for one moment what a difference the fact will make of our having perhaps 200,000—as we certainly shall have within the next year or fifteen months—200,000 vehicles in the country which are each capable of travelling at a rate of, say, on an average, twenty miles an hour all over the country, and carrying five, six, or seven people in each of them. To my mind that simply doubles the available power of any infantry force you may have in the country, because although we are told we shall get no warning of a raid, we shall at least get a warning that it is coming when those who are to carry it out are upon the sea. We ought then to be able with perfect ease to concentrate all the troops that are within a hundred miles of the shore at any point on the coast within that distance in one day. If such a thing is practicable, there is not a single individual who possesses a motor car who would not put it at the service of the military authorities, and we should then have a very substantial advanced guard pushed forward, and the same cars which took forward the advanced guard could return, pick up some of the troops marching on the road, and so take them up to the front without any delay. And all this could be done without any elaborate organisation, and without any practical expense at the moment at all. I am assuming all through this argument that our fleet is not there to smash up the attacking force, although we believe that the fleet will be there, and I have no doubt Captain Paynter will agree with me that it will be there; but we have to consider the question of some disaster having happened. We cannot contemplate a mutiny on board British ships, but we have to contemplate the fact that there may be some cause—it is very difficult to see what it could be—that would prevent our fleet being in active exercise against a raiding fleet coming by sea to this country. But suppose it is not there, shall we ever stop a landing unless we have at the place where the enemy tries to land a very considerable number of the largest and longest-range guns that can be turned out of our arsenals. I do not know whether we have got these guns in the country; all I can say is that we ought to have them. But each of those guns, which could be moved with rapidity by means of motor traction, would practically be worth five guns immovable in forts. The enormous guns we have at Portsmouth or Dover or anywhere else would be of no use to us if the attack by the enemy was being made on the coast of Yorkshire or Scotland; but if we had our heavy guns so constructed that they could be hauled along the road parallel with any attacking forces, those guns would be a better protection to us than Volunteers with rifles lining the shores; at least, their value would be very great. They would be the only means of preventing the enemy's ships from coming close in to cover a landing, and so keeping down the fire of the defenders. I think it is essential that motor transport and motor carriage should be developed in the most efficient manner for gun service. As Captain Paynter has said, there ought to be on all motors which are used for military purposes on a large scale a capstan drum. These enormous guns may require to be hauled up to places where they could not be brought into position by horses or by the motor car itself, but with the aid of two or three powerful motor vehicles, with proper capstan drums, and the use of the block and tackle, we ought to be able to do rapidly what the Boers did slowly by hand labour—run the guns into the places where they are

wanted, even though it be up a steep hill or over rough ground. As a difficulty in the use of motor cars in war, the tyre question is one which bulks largely in everybody's mind. To me the way to get over the tyre difficulty is that as long as you are compelled to use pneumatic tyres you ought to carry some spare wheels with the tyres on them ready fitted. If you are going to send motor cars out to do military duty they ought never to go out singly; they ought to go in groups of, say, perhaps six cars, grouped according to speed power, and a couple of spare wheels with such a group—supposing, as I have no doubt will eventually be the case, that they were replaceable the one by the other—would get over the tyre difficulty. You ought to have sufficient men to take off a wheel with its burst tyre and put on another, and then repair the burst one in the car, while you are running along the road. That is my suggestion for getting over the tyre difficulty, as long as you are in the position of having to use pneumatic tyres, and have to face the probability of their being punctured. I do not wish to detain you any longer, except to say that it would be a very good thing if everybody in this country who is connected with the Army as an officer would set himself at once to learn something about the working of a petrol engine and the working of a petrol-driven car. I think it would be a very good thing if nobody was allowed to get into the Army until he had learned the rudiments of the management of a motor car. In answer to the criticism that officers have to pass in so many subjects already, I would point out that any intelligent person can in a week or a fortnight learn all that is necessary for practical purposes as regards the construction of the engine and gears of a motor car. It is impossible not to see that it is one of the most important elements in the future, both for the purpose of attack and of defence. There may be difficulties in doing one thing and in doing another thing, but there are a great many things that can be done, and they can be done with a rapidity which was quite unknown in past times. I will just say in conclusion one word of warning. If we allow ourselves to settle down to the belief that something cannot be done in the way of the development of the motor car for the purposes of warfare, we may rely upon it that we shall find ourselves far behind some other nation which is determined that it shall be done. We have been ahead in this matter ourselves; I suppose we were the first people in the world who, with the aid of Colonel Mayhew and his friends, established a Motor Volunteer Corps, which I must say is the cheapest service to the Government which exists at the present moment. Let us not be behind, but press forward towards the development of what I consider to be, and what all men who have considered it carefully consider to be, one of the most important advances for the defence of the country that has ever been developed among us. The defence of our country is what we must look to in the first instance with regard to military matters, and we may rely upon it that everything we do to prepare ourselves for the defence of the country will be substantially useful if we have to fight anywhere else.

Lieut.-Colonel C. H. PAYNTER, Royal Monmouth R.E. (M.) :—With regard to the remarks of the last speaker as to the usefulness of motor cars, it is quite likely that we shall shortly have an opportunity of showing what they are able to do in that way in this country. The tendency in all the manœuvres now is to hold combined operations with the fleet, and we have already got to this point: that the enemy is supposed to land either in England or in Ireland. I think the next form

the manœuvres will take will be that the garrison of England will attack the garrison of Ireland, and the garrison of Ireland will be expected to repel them, or it will be *vice-versâ*, the garrison of Ireland attacking the garrison of England and the latter being expected to repel them. In that case the useful corps, of which the lecturer is a representative, will be the first called upon to repel the invasion, if it should take the form of Ireland invading this country. I believe there is no Motor Volunteer corps in Ireland, so that if the invasion should take place in turn from one country to the other we shall see the great advantages of the Volunteer Motor Corps in peace manœuvres. With regard to the breakdowns of motors, I think a great deal too much is made of them. What is there that does not break down? I have not seen much of war myself, but what I have seen is, that practically everything breaks down occasionally there except a mule. Everything is mended, and no doubt motor cars could be mended in some way. The lecturer has mentioned what should be one of the greatest advantages of motor cars, namely, that they can use any kind of oil. He has also said that he prefers the internal combustion engine. I would like to point out that the important advantage that he claims as being essential to motor cars, their being able to use heavy oils, is the very advantage possessed by steam cars. Therefore I do not think the last word has been said about steam cars for military purposes. Another difficulty which is likely to occur is that the drivers will fail, altogether apart from the cars failing, and there will be considerable difficulty in replacing them. When a horse soldier is laid up he at once hands his horse over for the public service; but if a motor car driver, who has been driving, say, a Wilson-Pitcher car, is laid up, you would have to go all round the camp before you could find some one who was familiar with that type of car and could drive it; so that you could not leave the motor car for the benefit of the public service in the same way that you can a horse. If some plan of standardising motors could be adopted, a great step would have been made towards efficiency. I do not say that the Motor Volunteer Corps have not shown all the efficiency that could be expected, but still I think probably they would give better results if the motors were standardised to some extent, so that we had a corps consisting of only one make of motor, instead of having a motley crowd, as we saw in the pictures shown, of all types and descriptions. With regard to the uses of the motor car for taking guns about the country, I think it is more probable that, at any rate at first, they will be used for the transporting of lighter guns, such as machine guns, and perhaps the new automatic rifle which fires 600 shots a minute. With regard to the first speaker's remarks as to their suitability for their carrying ammunition, I cannot say, from what I have seen of the internal combustion engine in motor cars, that I am altogether in favour of it. There are no doubt many brave men in both of the Services, the Army and the Navy, ready to volunteer for service in submarine-boats, balloons, or any other engine of warfare; but the driving of a petrol motor loaded up with boxes of cartridges would be a most dangerous undertaking. I should always fear that it might be subject to what I have seen in the streets occasionally—sheets of flame springing out from the car, and we should most probably have a most excellent imitation of a machine gun going off. You would probably do more harm to yourselves than you would do to the enemy by the use of the motor car in that way. That motor cars will be used in warfare there is not the slightest doubt. I remember perfectly well when I was a boy that people said bicycles were all very

well in times of peace, but they never could be used in war. But we all know that bicycles are now used very largely in war. I have nothing more to say, except to allude to the remark made by the lecturer, that one of the great advantages which had been found with motor cars at the manœuvres was that they were able to take the foreign attachés to see everything that was going on. I am very glad the manœuvres which the lecturer attended were of such a character that that should be considered by him as one of the greatest advantages, and I hope that future manœuvres will have the same characteristics.

Brigadier-General E. A. H. ALDERSON, C.B., A.D.C., *p.s.c.* (Commanding 2nd Infantry Brigade, Aldershot):—I feel that I am here to a certain extent under false pretences, because until a short time ago I hated a motor car; I am so fond of the horse that I hated the car. I do not like it now, but I see its utility, and our Chairman of to-day has more or less converted me to its use. I did not see the *précis* of the lecture until I came here this afternoon, and therefore I have not had much time to study it. I was umpiring at a war game at Aldershot this morning, and only just had time to catch my train. I came at a gallop with two horses to the station; if I had had a motor I should not have been so hurried! We are here to-day to think of the probable use of the motor in war. The great point which has struck me is the power which the motor gives to a general in command to get about and see the whole of his command. He can get anywhere in a day. In the last war we know that the front of the armies at times extended as far as ninety miles. If a general can get about even fifty miles in a day and see his men it means a great deal, because there is no doubt that the presence of the commander has an enormous moral effect upon his men. That, it seems to me, is the chief thing a motor will do for us in war. With regard to the car going across country, I know it can do so to a large extent. I was driven at our last Staff Ride by an officer, who drove the car very well, and we went almost anywhere. There is no doubt that a car can go across country, that is by bridle-roads and open fields, to a great extent. Then the motor car absolutely annihilates distance. We could not have done the Staff Rides we have had lately at Aldershot without the car. We were able to see a great extent of country, and all the time to educate ourselves as regards the use of ground, and so on. Lord Kingsburgh told us how useful cars would be for the purpose of meeting an invasion. The point did not strike me before; but if we have a large number of cars and can carry five or six good shots, or whatever the capacity is in each car, there we have a force which can quickly reach any threatened point and make a hostile landing most difficult. Lord Kingsburgh also said that every officer going into the Army should know all about a car. I think, however, the examinations for the Army are quite difficult enough already without that! As regards what I said about a general having a car and being able to show himself along the whole front of his command, I think he should also arrange for relays of horses to meet him at different places. When he got to a certain spot he could get on his horse, ride about and see the troops, and then return to his car again. The lecturer has referred to what a dreadful thing a tired horse is. I know there is nothing so bad; it tires the man as well as the horse. With regard to the question of reading a map while travelling in a motor, my experience is that the car, as a rule, goes too fast for you to read your map well. Captain Paynter also referred to the armoured train which

was used in the Egyptian War of 1882. I saw that train, and I quite agree with him, that in the future the armoured motor car will find a place in war. Captain Paynter also referred to the reliability of the car in skilled hands. I have been astonished at what the car can do in good hands. I do not quite agree that the motor car in the future will be part of the education of a cavalryman in the same way as he learns to ride a horse—I cannot agree with him there. In these days of large extensions, one thing we have to contend with is the difficulty of communication, and there the car will help us enormously; it must be so. It is a very difficult thing nowadays to communicate from right to left and all through your command. I think that when there is actual fighting, the horse is the only reliable means of sending orders, but behind the horse, away from the fighting line, the car will do a great deal for us.

Major G. K. ANSELL, 6th (Inniskilling) Dragoons, Brigade-Major, 3rd Cavalry Brigade:—I think one of the principal difficulties we have to contend with in the use of the motor car in war is the question of the tyres. Solid tyres have been mooted this afternoon, but it seems to be generally agreed nowadays that we must use pneumatic tyres. Up to the present we have had the brains of many scientific men of the country at work to make a tyre that would run on an ordinary road. In case of a war we should have not only very bad roads but also the brains of military experts at work devising something to stop the tyres working at all. In Ireland this year we used bicycles a great deal on some cavalry manœuvres, and we found they worked very well indeed until an ingenious scout devised the idea of carrying one or two penny boxes of tin-tacks with him. With the help of these he absolutely put out of action every man who tried to pursue him on a bicycle; and I think something of the same sort will be done in the case of the pneumatic tyre on motors. There are tyre covers at the present time which are supposed to prevent puncture, but they do not seem absolutely satisfactory. I simply rose for the purpose of calling attention to the fact that we want something better than the pneumatic tyre at present in use in war time.

The CHAIRMAN (Major-General A. H. Paget, C.V.O., C.B.):—There are one or two remarks I should like to make in regard to this interesting lecture from the practical point of view. I have had a motor car of my own for about the last four years, and I have used it during the manœuvres which have been referred to for the last three years. The cars that were owned by the Volunteers were not allowed by Lord Roberts to be used for military purposes; neither during the first manœuvres were our own cars allowed to be so used, but no objection was made to the use of the motor cycle. I will tell you what we did with the motor cycle, and I maintain that what you can do in peace you can do in war, within certain limits. I know it is a common thing for people to remark: "You could not have done that in war." The mistakes that are made in peace are made in war; that we all know. The good work that is done in peace, people say you cannot do in war. I say you can, and I will give you an illustration of it. A young officer of the Guards, on the second day during manœuvres of 1903, when the two forces were opposed, volunteered to leave at dusk, to go round the invaders, who were commanded by Sir Evelyn Wood, during the night, and report to my Chief, Sir John

French, the roads near which the whole of the invaders' forces were disposed and encamped. At this time neither Sir Evelyn Wood nor Sir John French, as it afterwards came out at the Conference, were certain where the force opposing them were placed. This young officer started at dusk, and went over 110 miles during the night. From the south he travelled west, then north, then back east, and so round, and before daylight reported the position of every one of the units of the invading force. Afterwards at the Conference it came out that he had not made a mistake. You will say that he could not have done that in war on account of the enemy's patrols and cavalry pickets. The answer is simply this: Given the number of miles that the flanking cavalry is out wide on the flank, and then it is only a question of the time you can give a man on a motor cycle to get round. That is obvious. It would be a pity if, what with our balloons and mounted troops, we could not locate the flanks of an enemy's force. Therefore I say you only have to locate the flank of the enemy, and to send your motor cyclist away in time, and he will bring back the information you require, unless captured or killed. In time of peace it is sufficient to send one officer; but in time of war you would send more, and from my knowledge of the British officer, we would have a score or more of men volunteering for the job. Here is a case where, in time of peace, two opposing generals did not know at a given moment exactly where the other was camped, and the motor cycle brought back the necessary information to one. Later on, on many other occasions, I have used my own motor. Sometimes I have sent a staff officer, and sometimes I have been in it myself for reconnoitring purposes, for locating, as far as you can, the enemy's cavalry or outlying posts of cavalry. For instance, given a hill wide on the flank of your enemy, and you want to see if you can make any use of it. You get into your motor car; in twenty minutes you are under the hill. You climb up, reconnoitre the position, and get back again. It is quite true you run risks, but in war one has to run risks. I have often used my motor for that purpose, and it has never been captured by the enemy's cavalry. Then you can use your car in another way, from the point of view of comfort. At the last manœuvres General Alderson was in command of his brigade, containing the enemy's force on the north side of the river. I was on the south side with my guns. The umpires, for reasons best known to them, checked General Alderson's advance. I had certain orders to carry out. The rain was coming down. I could not see with my glasses what was going on, so I got into my motor, went down the hill, across two meadows, over the pontoon, along the lane, and there I was, close to General Alderson, under a high fence. I only had to climb on to the roof of my motor, and with my glasses I had a fair view of what was going on. The telephone wires were brought up to the motor car, and within three minutes the reserves were moving up, the guns were going into their position, and inside the car my staff officer was writing his orders. The rain was coming down in a perfect deluge, but he was able to write his orders in comfort. You appreciate what an advantage that is, because you know what a blurred message is when it comes to you and you cannot read it. I simply mention these facts for the purpose of showing the way in which I myself have used the motor, and I repeat that having used it so in peace, I could certainly use it, under the same conditions, in war. Many suggestions have been made in regard to how a car can be used in war, but not the number of cars that should be provided. I consider that in time of war every army corps should have from nine

to ten motors. I am entirely at one with the lecturer in agreeing that it is quite possible to have fleet motors, the two ends of which would be partially armoured; and those cars could be used as scouts, or for conveying staff officers and generals to the positions to which they want to go for observation purposes. A perfect system of telephones has been introduced into the Service. Practically everything is connected; every regiment and all the batteries of guns are connected up, and ultimately linked up with the Commander-in-Chief. But still you must remember that the wires are very thin and are liable to break, and perhaps it might occur that a very important wire—say the wire between the Chief of an army corps and one of his divisional commanders—might be broken; and then if you had at your disposal a fleet motor, messages could be sent till the wire was repaired, and the loss of time over a distance of, say, five miles would be very little. Ten or twelve minutes would be lost and not more. Therefore I think that in time of war, as we have certainly shown in time of peace, the motor car is indispensable. I go further than that. I say that if, during the manœuvres that we may have next year, one army corps is provided with nine or ten motors and the other is without any motors at all, the army corps that is in possession of motors will have a distinct advantage over the army corps that has none, for the reasons I have already given you. The lecturer brought to our notice the various ways in which the motor car might be employed in war. The subject is a big one, and I do not propose to go into it at the present moment, but I am quite certain that in the future there will be ambulance motor cars. There always are, I am thankful to say, in this world a great many people who are very humane. Dreadful pictures will be drawn of men being left out all night upon the battle-field, and if the country does not provide for such motor ambulances there is no doubt that private subscribers will send out a large number of them. It does not mean that the wretched wounded man is taken any faster to the field hospital or to the dressing station, as the case may be; but what it does mean is, that the motor car returns at the rate of twenty-five miles an hour, so that it is only a question of figures to calculate the number of men you can remove from the field with a motor ambulance as compared with the number of men you could remove with the ordinary ambulance at the present day. I am quite certain that a motor car will be used for that purpose in future. There is one other way in which we ought to use motor cars now. I do not think that anybody has yet made an experiment in this line, but I propose to do it on an early occasion this year with my car. I think a motor car should be attached to the transport, and that motor cars should be used as tugs (for want of a better expression). At every manœuvres I have attended, and certainly during operations in the field, it was an everyday occurrence either to have wagons left behind or very much delayed, with the result that certain regiments or battalions did not get their food, or overcoats, or something else at night. When you come to a stiff hill with tired horses, it seems to me that if you had a motor car and some ropes there should be no delay on those hills on account of the wagons. I think in that respect you will all agree with me. Then there is another small matter I should like to mention, although perhaps you may say it is a personal one. I do think that the general officers in the field should, as regards transport, be self-contained; and I do think, putting aside the uses to which you can put motors as scouts and so on, that general officers should be provided with motor cars for their own use. When troops are in action nowadays one fights generally until it is dark, and

often begin again at daylight next day. The bulk of the men, except those on picket duty, look out for the best place they can find and go fast asleep, and remain there till breakfast time. A great many people who are not soldiers do not understand that a general officer after an engagement does not get much rest. He has his wounded to get in, his marching orders or attacking orders to be got out for the next day; he has to communicate with his chief, wherever he is, and there is work going on the whole night. It might be a question of how long he goes on before he breaks down; so that it seems to me that if the officer commanding an army corps and the officers commanding the divisions were provided with big motor cars, pretty much on the lines that army corps commanders are provided with at the present moment, namely, a sort of caravan car, in which you can keep your papers, and everything is to hand at a moment's notice, including food, it would be a most beneficial thing. When it comes on very wet you can get inside; if you want to write orders, do so in your car. I do think such a car ought to be provided. Then, in conclusion, I must call your attention to the fact, which I think is a very important one, that these cars, although they are very thirsty, are never hungry; they want no sleep, and they never tire; and it seems to me that is a very valuable thing in war, and a very good reason, if there were no other, why they should be employed in time of war. I have very great pleasure in proposing a vote of thanks to Captain Paynter for the very instructive and interesting lecture he has given us, calling attention to the possibilities of the future of the motor car. I have no doubt that on some future occasion, when perhaps the car as a military machine is in a more perfect state, and experiments have been tried, that he will give his attention to it, and go more closely into the question of motor cars being used on a very large scale for transport purposes, which I think would be a distinct advantage for the rapid movement of troops in the field at the present day.

THE SHORTAGE OF OFFICERS IN THE ARMY.

*By Major Lord DOUGLAS J. C. COMPTON,
9th (Queen's Royal) Lancers.*

WHEN one considers the difficulties which beset the organisation of the British Army, one can only feel astonishment that its numbers and efficiency are kept up as well as they are. With the country ruled by a representative government on party lines, and the Army managed by a civilian—a member of the party which happens to be in power—it is, to say the least, severely handicapped.

Perhaps the most difficult problem which successive Secretaries of State for War have to deal with is the supply of recruits, which, being entirely dependent on the popularity of the Army at the moment, must always be an uncertain quantity.

Matters have, to some extent, improved of late, but except at the moment when we are engaged in some war which appeals to the public fancy, the country cares little, and knows less, about the Army. Those who join its ranks do so because it suits their taste, or because they are driven to it by want of employment. There is no feeling that it is in any way a duty to devote even one member of a family to the service of his country; on the contrary, there is still a rather general feeling that the lad enlists because he is incapable of making his livelihood in any other way.

Secretary of State follows Secretary of State, and each one takes up the office apparently full of confidence in his ability to put things on a sounder basis. Each one produces schemes by which he proposes to give the country more men for less money; some even succeed in cutting down some avoidable expenses, and then, having raised the soldier's pay a penny a day, imagine that recruits will come pouring in; but each one retires from office discredited (often unjustly), and a new man commences to undo a system which has cost years of labour to start. Meantime, the Army muddles on in the same old way.

Soldiers—who, after all, should be the best judges—are generally of opinion that there is no way to mend the matter except by some form of conscription; and that it would mend matters there can be little doubt. Think of the difference that even the most limited form, which need scarcely be called conscription, would make. Suppose every male in the United Kingdom, who did not elect to serve in the Regular Army, or in the Imperial Yeomanry, or Volunteers, for a certain number of years, were compelled to serve in the Militia, so many months' training for so many years, what would be the result? The supply of recruits for the Regular Army, the Volunteers, and the Yeomanry, would be immediately increased; every male in the kingdom would receive sufficient training to enable him to take his place in the ranks in the event of war, and the country at large would get to know more and care more about its Army.

So much for the benefit which would accrue to the Army, but the country itself would benefit almost as greatly from its entire manhood having had to undergo a term of discipline and training.

It is a simple solution of the difficulty, and the more one looks at it the more one is attracted by it. There is only one argument against it, and that is, that those who rule are quite certain the country will not have it. As long as that is so we must make the best of present conditions; attract the recruit to the Regular Army by increased finery and pensions (not cubicles and "higher pay"), attempt to arouse the country to some interest in its Army, and by means of rifle clubs, and military cadet corps, give the manhood the first necessities of a military training.

But to counter-balance whatever improvement there is in the matter of recruiting for the rank and file, there is a new difficulty now arising—if it has not already arisen—as serious, or more so, than the difficulty of obtaining recruits for the ranks; I mean the shortage of officers. In these days it is difficult to open a paper or magazine without seeing articles or letters on officers' expenses, the education of officers, the shortage of officers, etc.; but these are mostly written by civilians, or, if by soldiers, by those who have long ceased to be regimental soldiers; so, perhaps, it will not be amiss for a regimental officer, who has spent the last twenty years in constant companionship with regimental officers, to write of the matter as it strikes them.

First, it will be as well to enquire what exactly is meant by the shortage of officers. We read of the successful competitors at the examinations for Sandhurst,¹ and we hear how keen the competition is to gain admission to that college, and yet an enormous number of regiments are without their full complement of officers, and, if rumour speaks truly, there are, at the War Office, a large number of officers' resignation papers awaiting acceptance. The fact is, that the number of cadets who can be accommodated at Sandhurst, and passed from thence into the Army, is at present insufficient to fill the number of vacancies caused by officers leaving the service.

One simple remedy for this would seem to be to increase the size of Sandhurst, so as to pass into the Army the number required to fill vacancies; and if we could be sure that the increased number of officers who are leaving the service each year are not those whom it is desirable to keep for the good of the service, this plan would have its advantages. Promotion would become quicker for one thing, and it seems to be universally accepted that in these days the vast majority of officers are too old for their jobs. There are, however, difficulties in connection with this plan. First, it is hard to say how many of the unsuccessful candidates at the competitive examination for entrance to Sandhurst do not subsequently pass in, or else go into the Army through the Militia. It is only by the actual surplus—that never get into the Army at all—that the number of our officers would be increased were Sandhurst enlarged, and the competition for entrance consequently lessened; the numbers of this surplus are probably small, and a simpler method of attaining the same object would be to increase the number of officers who are let in from the Militia. Secondly, there comes the question of obtaining officers for the Guards

¹ As the Royal Artillery and the Royal Engineers are not suffering from shortage of officers, Woolwich can be left out of the question.

and the cavalry, which, costing as they do more than other regiments to live in, can only be filled with officers desirous of going to them. Lastly, however successful may be the means taken to fill up the quickly recurring vacancies, the very fact that there are now difficulties in the way of officering the Army which have never existed till lately, proves that "there is something rotten in the state of Denmark." This—whatever it is—should be remedied, as the disease is catching, and one that spreads rapidly. Officers, both those in the Army and those who have left the Service, tell the younger generation their opinion of it. When many officers are leaving because they are dissatisfied with the conditions of the service, one may be sure that their opinion will have its effect on the boys who are making up their minds what profession to adopt. That this is actually the case at present is brought home to one again and again. Only a few years ago, when a soldier was asked what he was going to do with his son, the answer was generally the same: "Oh, put him into the regiment; he won't make money, but he'll have a d—d good time." Now the answer is generally: "Well, I don't know, but he's not going into the Service," and the most frequent variation to that is: "He's going to be a sailor." Why the Navy should now be more popular than the Army it is hard to say, unless because it is generally conceded to be a better run show, and because in it boys get a chance of having their own command, and showing whether they are worth anything before their hair is grey. Whatever the reason, there can be no doubt that the Army is at present becoming unpopular, and consequently suffering from a shortage of officers, and unless steps are taken to make the Army regain its popularity, matters will grow steadily worse.

It is constantly stated that the reason for this dearth of officers is that the pay is too small for the work that is now expected of them, and this is quite true as far as it goes; but the only remedies that are suggested are to decrease the expenses of living in the Army, and to increase the pay, principally the former.

Now it appears that decreasing the expenses of living in the Army—in the way in which it is done—far from attracting more officers, or deciding those already serving to stick to the service, is one of the principal causes of the present shortage. Decreasing officers' expenses almost invariably takes one of two forms: either to interfere with and attempt to limit the ways in which officers spend their money, by prohibiting regimental races, a regimental drag, regimental polo tournaments (this, I am glad to say, has not yet been done, though often proposed), regimental entertainments, etc.; or by making some change which at first sight appears to be a saving, but which almost invariably proves to be really an extra expense to the officers themselves, the saving—if any—being to their parents or guardians when officers originally join, and the State generally making a bit over the transaction. I allude to such changes as the supplying by the State to officers of furniture and of chargers, and also all changes in uniform. The only advantage gained is that "Pater-familias" cannot write so many complaining letters to the *Times*, which he probably enjoyed doing.

The money made by the State on furniture and chargers leased to officers is, I feel sure, quite unintentional, and is too little to be counted as an advantage, but the idea that the State should make any is an additional annoyance to the officers.

The only way in which expenses could be cut down so as to really benefit officers, would be by giving them furniture, chargers, uniform, etc., and that would cost the State money, and would not be such a satisfactory method as giving the officers more pay.

As regards increasing their pay, there is some talk of doing so now, and undoubtedly any increase in pay is an advantage which will be thankfully received, and will be likely to induce more to join the service and to remain longer in it. It is, however, out of the question for the State to enter the Army into competition with others as a lucrative profession, and without that we must be content to recruit our officers from those who join the service because they have a taste for soldiering, or because their circumstances induce them to do so.

There remains one remedy—which is never suggested—and that is to reduce the amount of work which officers now have to do, and to take other steps to make an officer's life in the Army as pleasant as it always used to be considered.

At first glance this appears to be too absurd and unsound a remedy to be seriously contemplated. For years there was an outcry over the want of education of our officers, until at last means have been taken to make officers work harder; and one can imagine the outcry at any suggestion of reverting to the old system. But is it certain that the proper means have been taken to make officers more efficient? Are our staff officers as efficient as they should be? Have we enough of them trained? And are our regimental officers any better educated, or any the better officers than they were 20 or 30 years ago? Soldiers generally answer all these questions in the negative.

The system at present is by multiplying examinations, and increasing the difficulty of them; to make each individual officer work either by himself, or at his own expense with a crammer; and by increasing the amount of drill and manœuvres for troops, and insisting on all officers being present, to cut down the amount of leave obtainable, and keep them constantly with their noses to the grindstone.

It is to this system that is due to a great extent the present unpopularity of the Army as a profession. If the system were sound, the consequent unpopularity of the Army would have to be accepted, and other means taken to procure the officers required, but is it sound? Again officers themselves answer with a decided negative. The late Colonel Henderson, whose views on the training of British officers are perhaps more worthy of attention than those of any other man, living or dead, writes of the British officer of 1899:—"It is to be remembered that even the idlest was not altogether an unwholesome subject. The unattractive and unpractical nature of his training in the United Kingdom or the Colonies was at the root of his apathy. Nauseated with dull theory, cramped by the want of responsibility, his energy unawakened by appeals to his intelligence, with no opening offered to him to acquire that higher knowledge which would have aroused his interest and kindled his ambition. . . ." What Colonel Henderson wrote of the officer of 1899, applies with equal force to the officer of 1905, and if it is admitted that the increased amount of work required of officers has not made them more efficient, and that the system is not sound, it becomes natural to enquire whether it is not possible to increase the popularity of the Army by reducing the quantity of work, while, at the same time,

increasing the efficiency of the officers by improving its quality, and the facilities for learning it.

Before proceeding further, it would be as well to consider what are our requirements in the way of officers, and what there is provided from which to supply those requirements.

We require two sorts of officers: regimental and staff. Considering first the regimental officers, we require men who are accustomed to command and to obey, who have an intimate knowledge of drill, of manœuvre, and of their men, and a knowledge of tactics and of strategy, increasing as they rise in rank. They must be active, fearless, self-reliant, brain and body sound and fit, ready to accept responsibility, quick to take in a situation, or seize an opportunity, and they must be gentlemen. For staff officers we require men who are much more highly educated in all military matters; they must have all the same qualities as regimental officers, indeed, they will have to be regimental officers themselves for a large part of their service; but besides all this, they must have their brains stocked with every kind of knowledge of military routine, organisation and equipment, movements of troops, camps, etc. Their knowledge of tactics and strategy should be greater than that required of a regimental officer of the same rank, they should know something of fortification and topography, and they should be possessed of infinite patience and tact. In short, they should be pattern individuals with universal knowledge.

Of these two classes—regimental and staff officers—we want a very much larger quantity than we have ever had. We want not only enough to fill the staff billets, and to officer our regiments up to full strength in peace time, but a reserve which will be ready in time of war; a quantity of officers serving with their regiments ready trained, and fit at any minute to take up staff duties; a quantity of officers not serving with regiments in peace time, but ready trained and fit at any minute to take up duties as regimental officers, and fill up the place of those taken to serve on the staff, and vacancies caused by sickness and death.

To supply these wants we have a very large number of lads anxious to go into the Army who can be divided into two classes:—

1. Those who mean to make a profession of the Army, and are anxious and ready to do any amount of work, with the intention of soldiering all their lives, and the ambition to become great soldiers.
2. Those who go into the Army for a term of years only, with no ambition ever to rise higher than the command of their regiment; and in this class is included many elder sons, heirs to property and means, who never intend to soldier for longer than a few years.

Now it may be—and very often is—said that the regimental officer should be a much more highly-educated individual than I have here indicated, and that the second class of officer recruits, spoken of above, consists of just those that are not wanted in the Army. "We want professional soldiers, not amateurs," has become a sort of catchword, used as glibly, and with as little meaning as invectives against "red tape" or demands for "military efficiency." With reference to the education of the regimental officer it is a question open to argument whether it is advantageous to educate anyone above their station in life, and in any case it is impossible to entirely officer

the Army with embryo generals. Why should a man who spends only ten years in a particular profession—or only one for the matter of that—be dubbed an amateur? In the history of our Army the regimental officers have been by no means the class who have shown up worst, and they have always, to a large extent, consisted of these very men who have no ambition to rise to anything beyond. This is, perhaps, especially the case in the Guards and cavalry. How do these corps compare with other regiments? The cavalry it is difficult to compare with anything except themselves, but those regiments called “crack,” to which go as a rule those very elder sons, and men of means, who never intend to soldier more than a few years, are, generally speaking, as much better regiments than others for soldiering, either on service or in times of peace, as they are on the polo ground, or in the hunting field. The Guards I have heard spoken of by staff officers — not Guardsmen — as an example to infantry regiments of the line.

Now it is in these very corps—of the Guards and the cavalry—that the present shortage of officers is most apparent, and thus it is seen that if the Army is better without the second class of officer recruits spoken of above, the present system is the very one likely to get rid of them. But what is the result? Up to the present, far from anything better having been produced to take their place, nothing at all—better or worse—has been found, and their places remain vacant. It is surely incontestable that the old class of regimental officer is better than none at all.

The question, then, is how to make the supply of officer recruits meet our demand to the best advantage in the way of staff and regimental officers, and the answer which most officers will give is:—Insist on work and proficiency up to the point where officers become good regimental officers and no further, but give every facility to all officers who wish to do so to study particular and the higher branches of their profession.

I have already alluded to the way in which the present system seems to consist in making work for officers to do, and to be devised with the intention—if any—of attempting to make every officer fit himself for the highest posts; but I have not yet spoken of the facilities afforded to officers—who wish to do so—of studying the higher branches of their profession. What are the facilities? When one considers for a moment, they seem to be conspicuous by their absence. It is so difficult to get into the Staff College that that course hardly comes under the heading of facilities. The study of any subject an officer wishes to learn has to be made in his own time, any assistance at it has to be paid for out of his own money, and at present every effort seems to be made to leave him less time of his own, and to officer the service with men with less money of their own. Officers are certainly paid some reward after passing examinations in foreign languages, but in most cases the reward does not cover the expense incurred in learning them, and for no other branch of learning are they paid any compensation at all.

But if there are no actual facilities for study afforded to officers, there are, at any rate, besides the Staff College, certain classes to which they can go to learn various matters connected with the soldier's profession, such as musketry, signalling, veterinary, pioneer, transport.

To begin with the Staff College—granting that it is a most excellent institution, well fitted to give the regimental officer the training

he requires in the theory of a staff officer's work, and of the higher branches of the military profession, still, it is much too small; so small that the limited number of officers who can attend each course have to be selected by a competitive examination, a very severe one from the fact that there are so many men competing for so few vacancies.

Now, if officers are to be given every facility for studying the higher branches of their profession, and for fitting themselves to be staff officers, there should surely be no question of a competition to be allowed to so study. The Staff College should be open to all. All should be invited and encouraged to go. Of course, officers commanding units would first have to recommend candidates as being proficient in regimental work and likely to make good staff officers. If considered necessary, there might be a pass examination before officers were admitted. These checks would keep the numbers within limits, as colonels would not be able to spare more than one or two of their officers from their regiments at a time, and the pass examination might be made to require sufficient ability and industry to prevent any officer from using the course merely as a "shunt," by means of which he could escape service in some unpleasant station.

Another regulation which prevents officers from going through the Staff College course is that which limits the age for entrance to 36. This again seems difficult to understand. There are many cases in which officers are prevented by foreign or active service, or other causes, between the ages of 25¹ and 36 from ever working for the entrance examination, any chance of success at which means for most men a good many months' hard work with a coach or crammer. Why should the officer of 36 be debarred from that assistance in the study of the higher branches of his profession which is given to his more fortunate junior?

If the Staff College is only intended to teach subalterns and captains the duties of junior staff officers, then it would appear that another institution would be desirable, at which all officers—at any rate, up to the rank of second-in-command—could study the higher branches of the military profession.

However, if all officers who wished, and who were recommended by their commanding officers as fitted, were permitted to go through the Staff College course, without any question of competitive examination, perhaps there would be no necessity to alter the age limit.

Now, if this suggestion were carried out, that is, if the Staff College were enlarged, and all officers encouraged to go, what advantages would there be to compensate for the extra expenditure?

In the first place there would be a far larger number of trained staff officers available in time of emergency.

In the second place, the efficiency of the staff officers would be increased, as it would be possible to select the best from those who had passed through the Staff College; and here it may be noted that, though undoubtedly the Staff College does what it claims to do—that is, sends away the officer, after having completed the course, more efficient than when he started it—yet both the Army and the reputa-

¹ Officers must have five years' service before they can go to the Staff College.

tion of the Staff College suffer from the fact that it is by no means always the officer most likely to make a pattern staff officer who goes through the course. The reason for this is the difficulty of the competitive examination, which chokes off many ambitious soldiers. Excelling in competitive examinations is a gift by itself, and is, moreover, a gift which does not by any means necessarily go with aptitude for either staff officers' work or for high command. Under the present system it is principally those who possess this gift who go to the Staff College, whence it follows that many of our staff officers and of those holding high command—including some of the most able—have never been through the Staff College, though there is little doubt that they would have benefited by doing so.

If it was made easy for every officer, who had ambitions beyond regimental soldiering, to go through the Staff College course, it would be possible to enforce the rule that no officer should hold any staff appointment till he had been through the course, and also to make every officer do a term of soldiering with his regiment between each term of staff service, say two years with his regiment after three years' staff service; this would keep staff officers in touch with regimental soldiering, which would certainly increase their efficiency, and would also ensure a larger number of officers having practice in staff work, which is at least as necessary for their efficiency as that they should have been properly trained in the theory.

In the third place, all these officers would have served a term with each of the other arms besides their own, as this is part of the Staff College course. To have done this is so beneficial to all officers holding independent commands, that unless they do it as part of the Staff College course, it would be advisable to allow all officers—say of the rank of major—to serve for one drill season with each of the other arms.

In the fourth place, we should have a larger number of officers on the active list, as all the officers actually at the Staff College would be seconded, and their places in their regiments filled up. That we require a larger number of officers has already been demonstrated, and while we have a very small Regular Army, and rely on the Auxiliary Forces to swell its numbers when occasion demands, the necessity for a large surplus of trained officers is all the more urgent.

In the fifth place, something would have been done to make officers more content with the conditions under which they serve, and to increase the popularity of the Service.

As regards the various classes—most of them optional—which officers can attend to learn certain subjects, it does not come within the scope of this article to criticise the way in which these classes are organised or managed. They are generally accepted as being excellent, but a knowledge of the subjects taught at some of these classes is required of every officer, whether he has been to the class or not, and a knowledge of many subjects is required, to teach which there are no classes. Every officer should of course go through the musketry class. Garrison classes had also an obvious purpose—to prepare officers for their examinations for promotion; it is hard to see why they should have been done away with. The result of their abolition is that officers pay a crammer to help them to pass these examinations; thus they are put to extra expense, which is contrary to the system of reducing expenses, and destroys the intention of the examination,

which is presumably to ensure that they should do some useful work, and prove their knowledge of necessary branches of military science. Work got up hurriedly with a crammer for examination purposes, and consequently forgotten directly after, cannot be said to do either one or the other. At a garrison class at least an attempt could be made to teach an officer what he ought to know in a useful way.

The signalling of the Army is a pattern of the way in which all such departments should be managed. The class for it is voluntary, so that only officers who wish to learn signalling, or who are selected by their commanding officer as likely to make a good instructor for the regimental signallers, go through it, and knowledge of signalling is not required of officers who have not been through the class. Yet I do not think it is ever suggested that the signalling of the Army is not up to the mark, or would be improved if all officers were obliged to learn it. Signalling is as important for the Army as topography or field engineering. Why should not the same methods be applied to them? The point to be noticed is that signalling is almost the only branch of military science which we treat entirely on the system of training experts to conduct it, instead of making it part of the stock of the Jacks-of-all-trades into which we try to convert our regimental officers.

As regards engineering, there is a cavalry pioneer class and an infantry pioneer class, to which officers can go to learn sufficient of the theory and practice of military engineering to instruct the regimental pioneers in bridging, hasty demolitions, entrenching, etc. So far excellent; but the *raison d'être* of the class is rather destroyed by the fact that every officer is required to pass an examination, for promotion, in the same subjects without going through any class at all!

For topography there is no class, but all officers have to pass in this subject also, in their examinations for promotion. It will be readily submitted that every officer must be able to read maps, and must know how to use a compass; but if we say that no amount of teaching will enable more than one out of every three officers to draw a military sketch which will be of any use, I think we shall be well within the mark. Surely this is a subject for experts, and should be taught to classes of those anxious and able to learn how to make maps. Of the others, nothing more should be required than that they should be able to read and work by them.

Then there is a veterinary class, which is optional, and at which no more is taught than what is already known by every officer who has had much to do with horses. Now, every cavalry and horse or field artillery officer should know more than this of veterinary science. It is a subject, moreover, which every officer could learn. It would therefore appear to be advisable to go further into the subject at this class, and to compel every officer of a mounted branch to go through the class.

The transport, supply, and gymnasium classes are to teach officers extra regimental work. We are not here concerned with them, but the system on which they are worked appears to be the correct one, and the general system which the foregoing remarks lead up to is this:—

1. That there should be classes to teach every branch of military science which will be useful to officers.

2. That in subjects such as musketry, tactics, strategy, and (for officers of mounted branches) veterinary, of which all officers can and should acquire a knowledge, it should be compulsory for all to attend a class and gain a certificate.
3. That in subjects such as signalling, field engineering, and military sketching and surveying, of which all officers are unable to acquire a knowledge, and for which only a certain number of experts are required, attendance should be voluntary, and no officer, except those gaining certificates at the class, should be required to have any knowledge of them.

It may be said that all officers must have some knowledge of topography and field engineering, and that the only question is exactly up to what point that knowledge is required. That does not affect the argument, which is that an expert's knowledge is required of a few, and very much less of the rest. Under the present system we have no experts, and require more than is necessary from all—certainly much more than all are capable of doing to advantage.

Enough has been said to show how the examinations for promotion required of all officers might be simplified. Map reading and such elementary topography as was considered necessary for all, as also the methods of obtaining cover quickly, either by digging or sangars—which would be practically all the field engineering necessary for every officer to know—could be included in the *a* and *b* part of the examination. The knowledge of military law required might remain unaltered, or rather more time might be given for the paper for which books are allowed. As arranged at present, it is nearly impossible to look up in the time everything in the book which is presumably the intention of the paper. Examination in organisation and equipment—a deep knowledge of which is only useful to adjutants and orderly-room sergeants—might also be confined to a paper to be done with books, so as to ensure officers knowing where to find the answers to any questions which might possibly present themselves; such Army organisation as every officer should know will always come under the heading of Tactics. The examination in tactics and strategy should not be reduced at all, but there should be compulsory classes at which officers would be taught those subjects.

There remains the question of leave. From time immemorial subalterns (and their seniors, too) have taken as much leave as they could get, and their commanding officers have kept this amount within reasonable limits. That system worked very well. Twenty years ago, and before that, young officers got very little leave beyond their ten weeks—as often as not curtailed to two months—in the year. But then officers could always get away for a day or two if there was nothing particular going on. Out of the drill season such work as was necessary was arranged so as to allow officers to get away and hunt, or even shoot, two or three days a week, and even in the drill season, after the work of the day was over, an officer could go anywhere he pleased as long as he was back in time for the work of the next day. Where was the harm in that? If an officer chose to spend his night dancing in London between two field days at Aldershot, he may have been rather sleepy during the second, but certainly no more so than he was again and again on service in South Africa or elsewhere, when he had marched during several nights, and marched and fought

on the intervening days. Now, at any rate at some stations, that has all been changed. In at least one brigade at Aldershot a year or two ago it was forbidden for any officer to spend the night away from Aldershot during part of the drill season, and this not at a time when there was any particular reason to account for the order. Those are the sort of orders which annoy and disgust officers. They will do any amount of work that is required of them, and won't even grumble if they know that the work has an object and must be done; but when their privileges—the way in which they spend their spare time and their spare money—are interfered with, they begin to say it is not good enough, and one day something annoys them more than usual, in go their papers, and the services of another (quite possibly promising) officer are lost to the country.

Officers give to their country the greater part of their time and the best work they are capable of; they are prepared to spend the best years of their lives in horrible countries with pestilential climates, and they are ready and eager to risk life and limb in the service of their country at any moment. This they do for a miserable pittance of pay, and then they are often treated like naughty schoolboys! Perhaps it is this treatment as much as anything else which causes the present shortage of officers.

Returning to the question of leave, the simplest and best system on which to work seems to be to insist on every regiment having a certain number of officers present with it—the number laid down varying according to the season of the year and the work on which the regiment is engaged—and leaving the rest to the officer commanding it. He knows which of his officers know their work and can be spared, and which of the juniors are fit to take the place of seniors who are away. There is always this to be said in favour of leave, and it is a very strong argument, that if the seniors are never away their juniors never get a chance of practising the work of the rank next above them. The battalion which has had all its company leaders present throughout a drill season will undoubtedly make the best show at a field day or inspection at the end of it; but send it on service, and a few weeks later when half the company leaders have gone, owing to casualties, staff employment, and what not, then the subalterns commanding companies in their places (yes, and their colonel too) will wish that they had had a little practice as well as example at the job in peace time.

There is a mean between the extremes in the leave question as in every other, and it is equally absurd to allow young subalterns, who do not know their work, to have as much leave as they care to ask for, and to refuse leave to an old captain or major who has spent the best part of his life soldiering under all conditions, because it happens to be the drill season.

This suggests another method of increasing our reserve of officers. That is, to grant to officers who are recommended by their commanding officers as knowing their work thoroughly well, who have served, say, two years in their present rank, and have passed for promotion to the next senior rank, one, two, or even three years' leave, during which they will draw no pay, be seconded from their regiments, and their places filled up. Many officers would avail themselves of this privilege when they were contemplating leaving the Service altogether, and of those a good many would ultimately come back instead of leaving. To grant leave without pay to others who have a craving for exploring

some country or shooting big game. To others, again, whose business affairs demanded a lengthy stay in England while their regiments were abroad. Of those who took this leave many would come back the better officers for having seen other countries, or met and mixed with other men besides soldiers. It would only take a month or two on their return to rub up their military knowledge, and make themselves acquainted with the changes that had been made during their absence, and they would be just as useful regimental officers as ever they were. If the contrary is argued, it can be replied that already officers on foreign service are allowed as much as a year's leave; some officers go on personal staffs of Viceroy or Governors for five years, sometimes more, during which time they do no soldiering; others are seconded from their regiments on becoming Members of Parliament, and others, less fortunate, are placed on half-pay, when, owing to sickness, they are unable to serve for a considerable time. I have never heard it said in any of these cases that the officers have been less efficient afterwards, nor that others grumbled at their coming back to their old places in the regiment.

If this privilege were granted, not only would many officers remain on in the Service who would otherwise leave it, but also every one of these officers away on long leave would be one more added to the reserve of officers so urgently needed. It is not difficult to imagine, in the event of war, how these would swell the numbers besieging the War Office and beseeching to be given any job which would take them to the front.

It is easy to foresee the criticisms which will be made on the system herein advocated. Doubtless it will be said that what has been suggested is to have a class of professional staff officers and a class of amateur regimental officers, and to give them all the same pay and rate of advancement. To this it may be answered that the intention is to have a class of professional staff officers and a class of professional regimental officers, instead of all being more or less Jacks-of-all-soldiering-trades. As regards the pay, it is so inconsiderable for the junior ranks that it had better be left out of the question. The State could never afford to compete as a paying profession with the Stock Exchange or "business," and the fact that nowadays so many gentlemen do go into the City or into business is one of the causes of the actual dearth of officers. As regards advancement, the present system, simply stated, is advancement by seniority until an officer comes on the staff of the Army, and advancement by selection after that. There are, of course, exceptions to the rule, as when an exceptionally able officer is offered promotion into another regiment, or when an exceptionally inefficient officer is passed over for promotion, or advised to retire from the Service. This rule, with its exceptions, cannot well be bettered, because under it the really clever, efficient, hard-working officer gets advancement as it is, and would probably do so even more if facilities were given him for studying his profession, as suggested. Moreover, he is the one who would ultimately rise to the top, whereas the man who never attempts to be more than a regimental officer will never rise higher than the rank of Lieut.-Colonel, if so far.

To recapitulate:—

1. Insist only on officers doing the work necessary to make them thoroughly efficient as regimental officers, but give every facility for, and encouragement to, all officers to study the higher and all branches of their profession.

2. Enlarge the Staff College, abolish competitive examination for admission to it, encourage all officers recommended by the officer commanding their unit to go through the course, and make no exception to the rule that after a term of staff employment an officer must serve a term with his regiment.
3. Adopt a system of specialists for all branches of military science which it is not necessary for every officer to know, such as signalling, field engineering, and military sketching, giving any officers who wish, opportunities of attending classes where these subjects are taught.
4. Insist on the number of officers really required being present with their corps, and leave it to the officers commanding units to grant leave to the surplus as they think fit.
5. Avoid all interference with the way in which officers choose to spend their spare time and money; there are many easier and more unwholesome ways than playing polo, driving a drag, or even giving a ball. The most that should be done is to insist that all subscriptions to regimental clubs, entertainments, etc., be voluntary, with the exception, of course, of those of mess, band, and furniture funds.
6. Remember that change is in itself a bad thing in the Army, and that changes should only be made when the good to be gained distinctly outweighs the evils of changing.

FROM PORT ARTHUR TO MUKDEN WITH NOGI.

By Major J. E. KUHN, Corps of Engineers, U.S.A.

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Infantry Association."

DURING his tour of service as an attaché with the Japanese Army during the recent war in Manchuria, it was the writer's good fortune to be attached for part of the time to the 3rd Japanese Army, under General Nogi, and to have been present at the fall of Port Arthur and the closing days of the battle of Mukden.

In what follows it is proposed to indulge in some reminiscences and to endeavour to throw some light on the character of the Japanese soldier, whose wonderful and unexpected prowess aroused the attention and interest of the entire civilised world.

It may well be questioned whether any single military achievement in the world's history surpasses the victory of the Japanese at Port Arthur, which has been aptly termed "a monster heroism," by an imaginative writer. From Nanshan on the 26th of May until the capture of Wangtai Fort on New Year's Day, 1905, it was simply a daily affair of hammer and tongs for the Japanese soldier which put his fighting qualities to the severest test. Always on the offensive, hurled back time after time from the grim and frowning parapet and trenches of the famous fortress, he persisted in his work with dogged energy and unflagging zeal, until he triumphed over his stubborn enemy.

At Nanshan, thirty miles from Port Arthur, the Russians believed themselves in an impregnable position, and here they proposed to check any farther advance by the Japanese.

The position is an ideal one for defence and seems to have been intended by nature for the purpose. Located at the narrowest point of the Liatung peninsula, where the width from sea to sea is only about one and one-half miles, Nanshan, meaning South Hill, rises from the sea and from the low ground with bare smooth slopes that can be swept to perfection by rifle-fire. The profile of the Hill is slightly concave, so that there is no dead ground. Successive lines of trenches encircled the slopes, while the summits were crowned by redoubts and batteries armed with siege guns. Wire entanglements and mines had been freely provided, and even searchlights to guard against night attacks.

According to the text-books it should be impossible to carry such a position by frontal-attack, and yet this was accomplished by the Japanese. The fact that the work of the Japanese Artillery was of a very high order and that the attack was further seconded by a fleet

of gun and torpedo boats on the Japanese right flank, does not detract anything from the splendid work of the Japanese infantry, which, lying under a galling fire from early morning, patiently waited for the psychological moment which did not arrive until sunset.

From Dalny westward to the extremity of the Liatung peninsula the country is extremely hilly, I might almost say mountainous, the hills being irregular, involved and with no well-defined direction. The highest elevations exceed 1,000 feet. After Nanshan the Russians fell back to a new hill position almost 12 miles west from Dalny, their line extending practically across the peninsula from sea to sea. The Gensan heights, nearly 1,000 feet above sea, was the centre and key of the position. On June 26th the Japanese carried these heights in a resolute attack, meeting with little loss. The Russians made desperate efforts to recover the position on July 3rd, 4th, and 5th, but without success. The fighting was very severe and included a night attack with bayonet fighting. The Russians again took up a new position several miles farther west, from which they were dislodged on July 27th. Their final position outside their fortress was the line of heights fronting the fortress, and only $2\frac{1}{2}$ miles distant. Here the Japanese surprised them on the night of July 31st, and compelled them to withdraw within their forts, saving only a number of detached hill positions on their right and left flanks.

In all the hill fighting from Nanshan to Port Arthur the Japanese infantry habitually laid aside their knapsacks when going into action, and generally discarded their army shoes, preferring their native straw sandals, which they either made themselves from the matting in which rice is shipped or purchased from the canteens for a few sen. While the regulation number of cartridges carried on the march is 150, the infantrymen usually entered the fight with from 200 to 300 rounds, the extra ammunition being distributed before going into action.

Speaking of canteens, the Japanese vendors of soldiers' delights were quite as enterprising as those of any other nation, and it was difficult to get away from beer, sake and cigarettes. Many of the canteen merchants carried fairly complete stocks of clothing, stationery and knick-knacks, but the first three items were always well in advance, being often carried on donkey-back or by Chinese pack coolies when troops were on the march. Like everything and everybody within the sphere of operations of the army, these canteen merchants were under certain regulations prescribed by the War Department.

At Port Arthur the Japanese soldier was put up against one of the stiffest propositions known to military art, viz., to capture a permanently fortified position by an open assault. Here again most text-books would say impossible, or even worse. While the Japanese failed in their attempt, they came near enough to success to justify their leaders in undertaking the assault and to relieve them from any criticisms for having attempted the impossible. Their leaders knew the temper and quality of their men and the quality of the enemy, and had weighty reasons for their desperate endeavour to overthrow all recognised canons of military art. The famous August assaults must ever stand as among the most desperate affairs that soldiers of any land have been called upon to undertake. From early dawn of the 21st until daybreak of the 24th, the Japanese troops were hurled by companies, battalions, regiments, and brigades against the forts and supporting works on the front of attack in the endeavour to break

through that strong circle of defence. The effort was not wholly in vain, for the two Panlung forts remained in possession of the Japanese, but at what a cost! The Japanese themselves admit a casualty list of 15,000, confined largely to two divisions, which means over 40 per cent. for these two organisations. Many of the attachés present believe, however, that the losses were considerably more, and the numerous stories of companies and battalions practically wiped out of existence, with other contributory evidence, would appear to confirm this belief. Had the Russians possessed any enterprise or energy at this period there is no telling what they might have accomplished by a vigorous offensive against the Japanese after the failure of their terrible assaults. But with characteristic indifference they remained within their fortifications strengthening these and building new ones, and leaving the Japanese to repair their losses and to pursue their plans unopposed.

It will not be possible in the limits of a single brief article to recount the details of the siege which now followed. Regular siege methods on orthodox lines were forced upon the Japanese, who several times attempted to cut short the regulations and rules prescribed as long ago as Vauban, only to realise that, after all, the engineers' art cannot be wholly set aside in modern warfare even with such intrepid troops as the Japanese, who seemingly courted death rather than avoided it. Suffice it to say that before the fortress capitulated to the steady, slow and tedious measures of sapping and mining, the Japanese attempted two more general assaults, one at the end of October and one at the end of November. Although these assaults failed in their main object they were not wholly devoid of results and materially shortened the work of sapping which would otherwise have been necessary.

For the five months during which the siege lasted the fighting was constant, close and deadly. In their advanced position at the Panlung forts, taken in August, the Japanese maintained themselves against the concentrated fire of the Russians coming from only several hundred yards distance in front and flank. At this time the Russian artillery had scarcely been touched, and their heavy artillery destroyed daily the protective works undertaken by the Japanese during the night. It was ten days before the latter succeeded in making their position reasonably secure, and during this period they averaged 100 casualties daily in these two earthen forts. The retention of the Panlung forts under these conditions forcibly illustrates one striking feature of the Japanese soldier's character, viz., his tenacity. Ground once gained was rarely, if ever, yielded voluntarily. The only instance, and this a doubtful one, in which the Japanese were forced back, so far as the writer's knowledge goes, is that of Putiloff Hill during the battle of the Shaho. The Japanese themselves claim that they gave up the hill voluntarily, and were attacked while evacuating the position, but this claim requires further confirmation.

To return to Port Arthur, the Japanese lines were soon pushed up very close to the Russian forts using the flying sap. The real struggle commenced after mining operations had begun. At this period the lines were separated only by the widths of the ditches of the forts and the sniping was constant with daily casualties. But most nerve racking of all were the hand and bomb grenades which were freely used by both sides. Imagine, if you can, the nervous strain under which men must labour not knowing what moment a tin can, old shell or rapid-fire cartridge case, containing from one to five

pounds of high explosive, may drop in their midst, an affair of frequent occurrence. In this grenade warfare the Russians had the advantage, as their lines commanded those of the Japanese. To all this must be added the nightly counter-attacks of the Russians, made by small parties, which would charge the Japanese saps in flank, and after throwing a volley of hand grenades, disappear in the darkness. The nerve or rather lack of nerve of the Japanese soldier is something truly remarkable.

On the 18th of December the north Cockscomb fort was mined and successfully assaulted by the Japanese, being the third time that they had attempted the capture of the work. December 28th and 31st, respectively, the Ehlungshan and Sungsushan forts were similarly disposed of, and it was evident that the end was approaching. During the nights of December 31st and January 1st, the Japanese pressed their advantage and captured the Chinese wall and a portion of the inner line of heights, the Russians resisting but feebly. On the evening of the 1st, a Russian parlementaire brought a letter proposing terms of surrender, and it was apparent that the struggle was over. Firing ceased at 10 a.m. the next day, pending the negotiations, and when night came the joyous banzais of the Japanese troops brought the glad tidings that the fearful contest had at last been brought to an end.

The siege of Port Arthur involved a fearful sacrifice of life, a result inevitable, considering the character of the operations. The best attainable figures give 65,000 as total killed and wounded on the Japanese side. As the combatant strength at the end of the siege did not exceed 80,000 men, this means 80 per cent. of the maximum strength of the army at its greatest. The engineer battalions suffered very heavily, as was to be expected, while many infantry units were almost wiped out. That is to say, of the original men coming from Japan nearly all had disappeared from such units. It must be understood, of course, that in the Japanese system of recruiting, reserves and conscripts were continually drafted and the fighting units kept up to approximately full strength at all times.

The Japanese at once commenced preparations for the transfer of the victorious army to the north to strike their decisive blow at Mukden. The burial of their dead, many of whom had lain where they had fallen since the August assaults, first engaged their attention, and soon funeral fires were seen at several points along the front of attack. Monuments were erected at many points in honour of those who had fallen, and the landscape was soon dotted over with these simple and impressive expressions of reverence for departed comrades. These monuments usually took the form of a plain unpainted shaft of pine set up on a pedestal of broken stone, surrounded by shells picked up from the field. On the shaft was placed an inscription commemorative of the organisation and the event.

The first battalions and regiments moved up to join the Shaho armies in the middle of January. The weather, which had remained unusually mild and open, changed soon after, and the last week of the month witnessed a heavy fall of snow, accompanied by zero temperature. The march of the army continued uninterruptedly, and by the middle of February, General Nogi's army had been concentrated about 15 miles to the west of Liao-Yang, behind the Hun River, and to the left rear of the Japanese lines on the Shaho. Many cases of foot soreness developed during the march, the troops being unused to

marching, although they had had plenty of fighting. The Japanese shoe is poorly made and of poor material. Added to this the nation is not accustomed to wearing shoes, and the infantry soldier preferred his native straw sandal at all times when the severity of the winter permitted. Even in the coldest weather many cases of the Chinese rawhide peasant shoes were worn by the troops. These are wide, soft, and comfortable, and when stuffed with straw, as was done, they suited the soldiers better than the unaccustomed leather shoe of Occidental countries.

The famous turning movement of General Nogi's army commenced on the 27th of February, on which day he moved out from his position, moving north between the Liao River and Mukden, feeling for the flank of the Russian position. No serious fighting occurred until the 6th of March, when the army was crossing the Simmintun highway. Here the Russians made an attack to check the movement but were repulsed. On the 7th of March, General Nogi's army faced east astride the Simmintun highway, one division being south of the road and two north, and endeavoured to break through the Russian defensive lines in the direction of the North Tombs. The centre division broke through the Russian lines at Ssu-fang-tai, but the right division could not advance owing to the Russian resistance. All attempts to advance on the 8th were also frustrated, the Russians holding desperately. On the 9th a dust storm, such as are common in winter in Manchuria, set in and prevented serious offensive undertaking on the part of the Japanese. During the night of the 9th and 10th, General Nogi's army executed a flank march to the north and on the morning of the 10th faced the railway only some 3,000 yards distant. At this time the Russians were in full retreat, having evacuated their defensive positions on the Shaho the night of March 7th-8th, and their sole concern was to cover their retreating troops and to prevent General Nogi from breaking through. For this purpose the Russians had taken up a strong defensive line along the railway, occupying the villages along the track and the railway embankment itself. This line held desperately and resisted all the attempts of the Japanese to break through. It was a magnificent sight, and a magnificent struggle. All day long the Russians could be seen in full view streaming along the road which lies along the railway track, battalions, batteries, train sections, squadrons, and disorganised stragglers, while the Japanese artillery poured a heavy fire on all points where the retreating troops came into view. But the Russian defensive line held firmly, and the Japanese infantry, after approaching to within 400 to 500 yards of the railway, could advance no farther. With the approach of darkness the retreating columns became more attenuated and soon nothing but stragglers filled the fields east of the railway. Not until then did the brave Russian defenders along the railway leave their positions, retiring by their left (south) flank, one battalion after another in good order. First the skirmishers could be seen to rise and fall back, joining successively the supports and reserves, and the whole forming up on the road and marching to the north. The long battle was over, and once more the Japanese remained victors on a hard fought field. General Nogi's army alone suffered nearly 20,000 casualties.

An inspection of the Russian line of retreat along the railway on the day after the battle terminated, revealed a sorry picture of despair and ruin. More or less panic must have seized the retreating

column, which had abandoned much of the transportation, the fields being filled with provision, ammunition, and pontoon wagons. The road itself was covered with abandoned equipment, the Russian soldiers having thrown away articles of winter clothing, haversacks, rifles, belts, and all kind of accoutrement in order to lighten themselves. Many of the Chinese villages along the front of battle had been set on fire, either by artillery or the carelessness of soldiers who had built large fires in the compounds to warm themselves at night, and the poor natives were seen returning to their ruined homes for which they may never hope to receive any compensation.

After Mukden, General Nogi's army, which continued to hold the extreme left of the Japanese line, made two advances, finally crossing to the west bank of the Liao River and taking up a front through Kang-ping and Chinchiatun, some 70 miles north of Mukden. Here it occupied a fortified line and remained in position until the conclusion of the peace negotiations, with no other excitement than the occasional clashing of hostile patrols operating between the fronts of the opposing armies. In the middle of May General Mitchenko made a raid around the Japanese left flank, marching well to the rear of the Japanese front but doing little harm.

In the weary months following Mukden the Japanese soldier took life very quietly. Billeted in the miserable Chinese villages, whose wretched inhabitants were crowded out to make room, the soldiers made themselves comfortable, cleaning up their filthy surroundings and passing the time away in beautifying the dirty compounds or enclosures by ditching and drainage, building walks, and constructing miniature Japanese gardens. What an object lesson it must have been to the Chinese, and it is hoped that the Japanese occupation will not be without some lasting benefit to the hygienic conditions of Manchuria. To still further occupy the soldier's mind, and no doubt as a safeguard against nostalgia, many fêtes and sports were organised. Every available national holiday or event of the war was seized upon to organise some form of entertainment. The national sport of wrestling was encouraged and scarcely a village occupied by troops that did not have its wrestling-ring, where the Japanese soldier daily practised his favourite sport, stripped bare save for the loin cloth. Regimental, divisional, and army fêtes to commemorate anniversaries in the history of the war also occurred, and some of these were of truly gigantic proportions and challenged the admiration of the foreigners, who never ceased wondering how such elaborate preparations were possible in far away Manchuria. One of the most notable of these events was the extensive fête given by the 9th Division at Chinchiatun, close to and within sound of the outpost firing line. This affair was to commemorate the anniversary of the capture of the Paulung forts, in which this division lost most heavily. The fête lasted two days, so as to enable the entire division to attend, and took the form of a Japanese fair, with a huge wrestling-ring, theatre, and many booths for the dispensating of food and drink, such as delight the Japanese palate. Soldiers dressed as geishas, dancers, pedlars, in fact all the good-natured and happy throng. At the wrestling-ring all the crack wrestlers, many of them professionals, competed for prizes, which were usually inexpensive packages of stationery, soap, cigarettes, towels, or handkerchiefs.

In his personal habits the Japanese soldier is distinguished from those of other lands by a number of noteworthy characteristics. He

is naturally of a very quiet and orderly disposition, and not given to roaming about when off duty as is the American. It was frequently remarked that from all outward evidences there were very few soldiers about, yet we knew in fact that the quiet villages held many thousands. When not on duty the Japanese soldier prefers to remain indoors sleeping, reading, or writing letters, of which latter they seem particularly fond. Sobriety is another most striking characteristic of the Japanese soldier, and although beer and sake followed closely behind the troops on the march, and the canteen was manifest everywhere, drunkenness was almost unknown. I can honestly say that while I have on several occasions seen a man slightly under the influence, I never saw a single case of a real drunk.

Cleanliness is another ingrained virtue of the soldier, and his efforts to obtain his daily bath, or rather wash, were both amusing and pathetic. Whenever the army halted bath tubs would be improvised from every available object, the large Chinese stone jars used for domestic purposes and empty sake casks being favourite forms. Water would be heated in their camp kettles or kerosene tins, and daily at evening, even in cold weather, with the thermometer below freezing, naked soldiers could be seen in and about their billets engaged in taking their baths. At headquarters and étape stations quite elaborate bathing facilities were fitted up according to the Japanese plan, and Chinese coolies engaged to carry water to fill the tubs or tanks.

In summer the soldier rises at 5.30, breakfasts at 6, and repairs to the place of assembly at 7 a.m. for some hours' drill or field exercises. While each company of infantry has buglers, no calls are sounded for assemblies, the men making their way individually to the place of assembly. This absence of music is one of the noteworthy features of the Japanese army, which seems quite strange to the foreigner. Dinner is at 12, after which all proficient soldiers had the day to themselves. The less proficient received two hours' drill or instruction from 3 to 5 p.m., supper is at 6, and at 9 the soldier retires to his kang to sleep.

He is an inveterate cigarette smoker and bibbler of tea. The cigarettes are mild and the tea is weak, and neither seem to affect the nerves, if indeed the Japanese can be said to have any.

On the march the Japanese soldier is a good weight carrier and capable of much endurance, but his gait is rather awkward. His body is rather long for his legs, which, with the short steps induced by wearing wooden clogs at home, combine to develop knee rather than hip action. The soldier marches with a perceptible drag as if he were perpetually tired, but in the language of the day, "he gets there just the same."

Considering the qualities which are deemed desirable in the soldier of the day the Japanese certainly seem to come as near to possessing these as any nation on earth. Intelligent and patriotic, calm and phlegmatic, brave and tenacious, they make ideal material for soldiers, and their achievements during the recent war need cause no wonder.

SOME LESSONS OF THE RUSSO-JAPANESE WAR.

*By Général DE NÉGRIER. Translated by permission from the
"Revue des Deux Mondes."*

The progress made in artillery has made people think that its rôle in battle would be a decisive one. This, however, is not the case: its rôle is merely important. The destructive power of the new guns on exposed troops has produced this immediate effect—that they carefully take cover, dig themselves into the ground, both when attacking and on the defensive, and almost always manœuvre under cover of the darkness. From the first engagements, the necessity for adopting these precautions was so obviously necessary that the methods of battle of all arms were at once modified. Let us first recall the composition of the artillery on both sides.

The Russian artillery was sensibly superior to that of the Japanese. Its quick-firing field gun on non-recoil carriages used two projectiles—a shrapnel and a shell charged with a powerful explosive. Its flatter trajectory gave it a greater range than that of the Japanese mountain gun. The Russian Army was also provided with heavy artillery, siege guns, and even mortars.

The artillery of the active Japanese divisions is of the quick-firing Arizaka model, with a calibre of 3 inches. The recoil is taken up by spring brakes, but the gun has to be relaid after each round. The mountain gun of the same calibre is a light piece with an effective range of only some 3,300 yards. Finally, the territorial divisions have a bronze howitzer mounted on a platform, the whole recoiling bodily when the gun was fired; it was brought back again into position by means of wheels working on two axles. These howitzers are moved by means of carts drawn by drag-ropes by those working them; the whole *matériel* was very mediocre, but nevertheless the howitzers were used everywhere.

Invisibility has become an essential condition; this is the dominating fact of the whole war. When batteries were visible or their emplacements were an indication of their position, they were, in some cases, reduced to such a condition that it was not possible to retire them from the field of battles. The epaulements, when they were visible, were not sufficient to prevent the batteries being silenced. Thus, from the battle of Vafangou (14th June, 1904), the artillery on both sides only used indirect fire. As, on the other hand, the ground in rear was scoured by the rain of shrapnel for a considerable distance, and that progressive fire was constantly employed, it was necessary the greater part of the time to keep the limbers under

cover some 800 or 1,000 yards from the batteries. The keeping up of the supply of ammunition was generally only possible when it was carried up by hand. This is a very important point to which we cannot draw too much attention.

When battle is joined, the change of position of artillery becomes difficult. The desideratum of having all the infantry attacks closely supported by the accompanying batteries can only be realised in exceptional circumstances, and this leads to the employment of artillery in massed batteries. The Japanese obtained important results from bringing all their guns into action from the beginning, and employing it in masses. At the battle of the Yalu, they formed batteries of 30 and 36 guns, and at Vafangou, a battery of 110 guns was placed at the pivot of the turning movement. "It dominated the field of battle," said the Report. "Placed in front of the Russian right, its fire enfiladed and destroyed the batteries of the left wing. The great results obtained by the Japanese fire were due to the concentration of the fire of several batteries on the same objective. It is clear that these dispositions tend to increase the difficulties of regulating the fire. The commanders of batteries are constantly obliged to station themselves some distance from their guns. Often the Japanese observers climbed trees, and from there communicated by voice with those serving the guns, or they even betook themselves to the crest of the ridge masking the battery, and communicated with it either by means of a telephone or by flag or disk signals. The ordinary distances of battle fluctuated to ranges of 3,000 yards. Both on the Russian as well as on the Japanese side, fire generally took place by salvos of batteries. It was not possible to make use of the *Rafale*, of which so much has been heard since the adoption of guns on recoil-absorbing carriages. The rapidity of fire of the guns has only been utilised in very rare cases. The difficulty of maintaining the ammunition supply was the reason for this. Very often the artillery on both sides fired its salvos at intervals of three minutes. Often even the intervals were longer, and it frequently happened that some of the artillery was compelled to cease firing for several hours in order to not completely exhaust the sectional ammunition in the rear. The absence of sufficiently distinct objectives and the necessity of economising the ammunition often caused the fire to degenerate into a regular and slow bombardment."

In order to give a better idea of the manner in which artillery was employed, let us enter into some details. On the 9th June, 1904, General Stakelberg bivouacked on a defensive position organised to the south of Vafangou Station. He disposed of 29 battalions, 23 squadrons, and 32 guns. An advanced detachment composed of the greater part of the artillery, a battery of horse artillery, a brigade of sharpshooters, and the 1st Battery of the Field Artillery Brigade, were extended from Lidiadine to Tchidiatoun, on an arc of a circle of four miles, and furnished the advance posts. On the 11th and 12th June the Japanese came into touch with the front by some small engagements. On the 13th, at 10 a.m., they directed against the centre of the position 6 battalions, 6 squadrons, and a mountain battery. The Russian advance posts fell back fighting. On the 14th June the Japanese advanced corps fell back in its turn. Stakelberg proposed to entice the enemy against his position, to exhaust him there, and beat him by a counter-attack. The position that he chose was astride a stream running from the north to south.

The west sector was entrusted to the 9th Division, the eastern to the 1st Division. In the west sector some entrenchments for the infantry and sunken epaulements for two batteries had been constructed. In the east sector, behind the crest of the ground, there were epaulements for three batteries. Some roads giving access to the position had been opened. On the flank of the mamelon that the artillery was to occupy, some trenches were made as far as the bottom of the valley; towards the east they were connected with another line of infantry entrenchments. The retiring movement of the advanced corps began at 6 a.m., a battery of artillery covering the movement which was carried out slowly, first by the 1st regiment of sharpshooters and a regiment of dragoons, then by the 2nd regiment, which reached the designed position in several columns. At 9 a.m. the Russian artillery, seeing the Japanese artillery taking up position, disappeared before fire was opened on it. The 2nd regiment then retreated by *échelons*. Up to this moment everything had been done in good order. On the right the 9th Division had extended a regiment of sharpshooters. The men were lying down ten yards in rear of the trenches which followed the crest. A company occupied the village of Tafanchiou, which had been placed in a state of defence. The remainder of the division (two regiments) were concentrated in the valley to the east of Sizan. The Japanese brought into action a battery of their advance guard. Before opening fire, this battery had sent its limbers to a distance behind a village. The two first shells burst in front of the position of General Guerngross, who was in command of the advance guard, the next two in rear, and the Japanese battery then maintained an effective fire. The general was wounded. The Russians brought up by hand the ammunition for the batteries in their emplacements. One of the batteries regulated the fire. The two others, with it, opened an effective fire, which overwhelmed that of the Japanese battery, the gunners abandoning their pieces and taking refuge in the village, where the Russians watched them. Towards 1.30 p.m. two other Japanese batteries joined in at a range of about 3,500 yards, but their fire was without effect; but another battery, which could only be made out by an occasional flash, could not be located. This group immediately became very dangerous; it fired in accordance with directions transmitted by flags from stations some way off on the adjacent heights. The shells burst at a good height. In a few minutes the 4th Russian battery had lost all their officers and the other batteries had been silenced. Then the Japanese infantry began to creep up the valley. By small groups the skirmishers formed a line of fire at the foot of the heights, then advanced creeping slowly up. The 1st regiment attempted a counter-attack; it suffered heavily, its colonel being among the killed, the survivors regaining the slopes and returning to the trenches. On their side, the Japanese remained clinging to the approaches to the crest, and during the night organised the defence of the conquered ground. On the morning of the 15th June, General Stakelberg made his projected counter-attack against the Japanese right. He drew up two regiments on a front of $1\frac{1}{2}$ miles and formed a column of attack, consisting of the 1st, 2nd, and 3rd regiments of sharpshooters and three and a half batteries. The 2nd Brigade of the 39th Division formed the general reserve. The rest of the artillery was distributed along the front, and on each side of the guns four piles of six projectiles each were placed. But during the night, as has

been already mentioned, the Japanese had concentrated opposite the Russian right a battery of 108 guns, placed at the point of the turning movement which they had already commenced.

Between 7.30 and 8 a.m. the 3rd and 4th Russian batteries were not engaged. At 8.30 the Japanese infantry made an unsuccessful attack against the front. At 9 a.m. General Stakelberg launched his counter-attack. The 2nd and 3rd regiments extended, keeping three companies in partial reserve; the 1st regiment forming the general reserve. The line of attack advanced by sections, formed in dense lines of skirmishers, who halted from time to time to fire volleys. But very soon the losses were such that all these tactics of the manœuvre ground fell through. The men very quickly formed themselves into small groups which, after each rush forward, reformed, themselves in line. In this fashion the Russians reached the foot of the slopes, and were then taken in flank by the fire from a force of cavalry. They could not advance farther, and remained lying down in the dead angle up to the moment when the retreat was ordered (an hour and a half) on account of the outflanking movement of the Japanese. The 4th battery had to be abandoned, the teams having been killed. It was for this reason the Russians left so many guns in the hands of the enemy.

The artillery sometimes produced by surprise great effects on the troops, who, believing themselves to be sheltered, committed the blunder of falling into compact formations instead of extending themselves in small bodies. On the 9th July, in a valley close to Gaitschou, the Japanese had concentrated infantry in mass formation. A Russian battery of thirty guns, placed behind a hill, directed on these troops an indirect concentric fire, and very quickly inflicted on them considerable loss. When the reserves approach the fighting it is always dangerous to keep them massed; they ought to be formed in semi-extended order with intervals between the units.

Often the artillery was sufficient by itself alone to render impassable during the day considerable sections of ground. On the 25th July, at Tatchitso, the Russians occupied an intrenched line 10 miles in extent, in advance of which, distant some $2\frac{1}{2}$ or 3 miles, were the posts of the advanced guard, also intrenched. The Japanese attacked these advance posts, and they fell back on the main position. On the 24th, all the Japanese artillery came into action, and maintained a fire for fifteen hours without ceasing. The Russians only placed in line two regiments of infantry and some batteries. After this cannonading, the Japanese launched their infantry, but the fire of the artillery overwhelmed them, and the attack failed. The Russians then committed the blunder of making a counter-attack with the bayonet. One regiment lost 500 men in a few minutes, and it was forced to lie down where it was in order to avoid total destruction. It could only fall back when night fell. During this time the 1st Russian Corps kept in check all day the enemy on its front, with six batteries supported on the outer flank by two batteries of a cavalry division. Not a single infantryman was engaged, and yet the Japanese were unable to push their infantry to within $1\frac{1}{2}$ miles of the batteries. In proportion as the war prolonged, it is affirmed that during the day the artillery governed the battle, whilst the infantry acted chiefly during the night.

The battle of Liao-Yang lasted from the 29th August to the 2nd September without the batteries on either side doing more than maintain an indirect fire. The Russian batteries suffered little. Against the shrapnel the gunners took shelter in their trenches, and the fire was suspended, so that the artillery struggle was seldom simultaneous. In some cases the Russian batteries, the position of which the Japanese seemed to have detected, changed their position in the intervals of firing, and thus escaped destruction. Two Russian batteries on one occasion suffered heavy losses, because, having changed their position, they had not dug their shelter trenches deep enough.

Against the trenches the Japanese employed simultaneously shrapnel and common shells. These last scarcely produced any effect. Their detonation was violent, but the troops quickly got accustomed to them, so that their *moral* even was not affected. It is now recognised that explosives ought only to be used with shells of large capacity.

The expenditure of ammunition exceeded all expectations. To give some idea we will cite one total alone. On the 23rd July, at Tachichiao, three Russian batteries (24 guns) fired 7,402 rounds. One of the batteries fired 4,008 rounds, that is 502 a gun.

The necessity for having a more powerful artillery than field artillery became manifest from the beginning of the war, both on the Russian as on the Japanese side. The Russians even used mortars. At Liao-Yang 6 batteries of mortars were distributed (two to each) to the 7th, 10th, and 3rd Corps. Their short range only permitted of four being used. Every time that circumstances permitted of it, siege guns were brought on to the field of battle. On the 2nd September, at Liao-Yang, General Oku attacked the centre by the railway. His artillery was grouped by divisions. Some 12-inch guns were brought up on trucks. On the 3rd September, thanks to the effect of this heavy calibre artillery, General Oku was able to advance his field artillery to within 1,200 yards of the Russian lines. The infantry on both sides were firing at from 800 to 600 yards. Nevertheless, in spite of the overwhelming nature of the artillery and rifle fire, the Japanese did not succeed in silencing the fire of the trenches. At 10.30 they delivered a desperate assault. There was only frightful carnage, and the situation remained unchanged till night. It was recognised that the heavy artillery was not numerous enough.

In the defensive organisation of the field of battle at Mukden some batteries of siege guns were placed in front of the Shaho-po Station. During the night of the 28th February, in spite of the Japanese electric search-lights, the Russians took possession of the bridge-head of the Shaho, and maintained themselves there. They only evacuated this position on the 7th March, and then by orders of Kuropatkin.

During the battle use was sometimes made of balloons. On the 28th August the Russians, by means of a captive balloon regulated the fire of their artillery. In general, they were little used.

Artillery of heavy calibre like the howitzer is now indispensable to field armies. We must resign ourselves to this necessity. It is the same with machine guns. Both infantry and cavalry must be provided with them. They can be constantly used, because by means of them a considerable extent of ground can be strongly held with only a few men.

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Rear-Admiral—G. Le Clerc Egerton, C.B., to be Second-in-Command, Atlantic Fleet. Captains—H. H. Torlesse to "Bedford"; G. H. Moore to "Euryalus"; G. A. Ballard to "Royal Arthur"; A. S. Lafone to "Blake"; J. S. Luard to "Leander"; E. H. Grafton to "Endymion"; R. A. Allenby, M.V.O., to "Centurion"; C. E. Hunter to "Scylla"; H. T. Hibbert to "Latona"; T. D. Sheppard to "Enchantress." Commander—C. D. S. Raikes to "Clio."

The first-class battle-ship "Queen" left Portsmouth on the 11th ult. on her return to the Mediterranean for a further term of service. The first-class battle-ship "Prince of Wales" arrived at Portsmouth from the Mediterranean on the 17th ult.; she paid off on the 29th ult., re-commissioning on the following day for a further term of service in the Mediterranean. The first-class battle-ship "Albion," from the Channel Fleet, paid off on the 7th ult. at Chatham, and is to undergo a thorough refit.

The first-class cruiser "Royal Arthur," flag-ship of Admiral Sir D. Bosanquet, in command of the Fourth Cruiser Squadron, paid off on the 14th ult. at Portsmouth, her crew being transferred to the first-class armoured cruiser "Euryalus," which commissioned as flag-ship of the squadron on the following day at Portsmouth. The first-class cruiser "Edgar," also of the same squadron, paid off at Chatham on the 14th ult., her crew turning over to the first-class armoured cruiser "Sutlej," which paid off from her former commission in China the same day and re-commissioned on the following day to take the "Edgar's" place in the Cruiser Squadron. The first-class armoured cruiser "Hogue" commissioned on the 15th ult. at Devonport for service with the Fourth Cruiser Squadron, the first-class cruiser "St. George," late of the same squadron, paying off at that port the same day.

The second-class cruiser "Bonaventure," from China, paid off on the 7th ult. at Devonport. The second-class cruiser "Latona," detached for duty on the Newfoundland Fisheries last year, paid off on the 14th ult. at Portsmouth. The second-class cruiser "Venus" arrived at Portsmouth on the 17th ult. from the Mediterranean, paying off on the 29th ult. and re-commissioning on the following day for a further term of service on the station. The third-class cruiser "Katoomba," from Australia, paid off on the 1st ult. at Portsmouth.

Loss of Torpedo-boat No. 56.—No 56 was one of five torpedo-boats specially commissioned at Malta for service in the Suez Canal in connection with the boundary dispute with Turkey. At 5 p.m. on the 17th she left

in tow of the "Arrogant," on her return to Malta, and at 1.30 a.m. the following morning, when off Damietta, she capsized, one first-class petty officer, an able seaman, an engine-room artificer, a leading stoker, and three stokers being unfortunately drowned. There was some sea on, apparently, at the time, and if the boat got into a cross sea the disaster would probably be due to this.

Stranding of the "Montagu."—In a dense fog about 2 a.m. on the morning of the 30th ult. the first-class battle-ship "Montagu," belonging to the Channel Fleet, struck on the Shutters, a dangerous ledge of rocks on the south-west end of Lundy Island. The "Montagu" was employed in testing some new appliances, designed to prevent wireless messages being tapped. She seems to have anchored in a fog in the roads off the north end of Lundy on the previous morning, but to have weighed again in the evening with the intention of going down Channel. Every effort is being made to save the ship, but this will naturally depend upon the continuance of fine weather; she is lying within some fifty yards of the cliff.

THE NAVAL MANŒUVRES, 1906.

Admiralty Explanatory Statement.—The following statement explaining the scope of the forthcoming Grand Naval Manœuvres has been issued by the Admiralty :—

The Naval Manœuvres this year will be divided into two distinct periods separated by a week, which interval will be devoted by the Admirals to tactical exercises of their respective commands.

The war-vessels to be employed will include the Channel, Mediterranean, and Atlantic Fleets with their attached cruisers and torpedo craft, the First, Second, Third, and Fourth Cruiser Squadrons, with all torpedo craft in Home waters, both in full commission and in commission in reserve, and the vessels of the Reserve Divisions at the several Home ports. The only vessels in Home waters which will not take part in the first period of the manœuvres will be those undergoing extensive repairs and refits.

Advantage will be taken during the first period of the manœuvres to test the arrangements for mobilisation of the fleet under war conditions.

The co-operation of the mercantile marine has been invited during the second period of the manœuvres.

The general idea of the second period of the manœuvres is based upon the assumption (for manœuvre purposes) that war has broken out between a stronger naval Power (Red) and a weaker but still formidable naval Power (Blue).

Although under such circumstances the primary object of the Red Commander-in-Chief would be to seek out and defeat the Blue fleet wherever it appeared, it is not to be expected that the Blue Commander-in-Chief would risk a general engagement with the Red fleet, unless he could bring to action a portion at a time, and under conditions favourable to himself.

Among the steps that he would be likely to take to cause a dispersion of the Red fleet, with a view to obtaining such an opportunity, the most likely to succeed would be an attack on the Red Trade.

In adopting this course he would count not only on the actual loss he would be able to inflict on his enemy, but also, if the Red Nation was one largely dependent on its commerce, he would be able to reckon on creating a national panic which might compel the Red Commander-in-Chief to disperse his forces to an extent that neither the actual risk to commerce nor sound strategy would justify.

The investigation of the actual risks to which the trade is likely to be exposed under these conditions, and of the best means of affording it protection, without sacrificing the main object of taking every opportunity of bringing the enemy's fleet to action, is evidently of great importance, not only to those who have to conduct the operations, but also to the mercantile community.

An under-estimate of the risk to the trade and a too great concentration of the Red forces might give the enemy the chance of inflicting great and avoidable loss on the merchant shipping, while on the other hand, an over-estimate of the risk might lead to a great rise in the rate of insurance and an almost complete stoppage of trade, which would be more injurious to the country than any losses likely to be inflicted directly by the enemy.

In either case a demand would probably arise on the part of the Red community for an injudicious dispersion of the Red forces on expeditions for the direct protection of trade, which would render them liable to be defeated in detail, and greatly reduce the chance of bringing the enemy's main fleet to action.

Such in outline are the problems to be elucidated (so far as practicable) during the forthcoming manœuvres.

Red territory will consist of England, with defended ports at Milford, Falmouth, Portland, Plymouth, Portsmouth, Sheerness, Swansea, Cardiff, and Barry.

Blue territory will consist of Scotland, Ireland, and the Channel Islands, with defended ports at the Firth of Forth, Queenstown, Berehaven, and Alderney.

Co-operation of the Mercantile Marine—Official Instructions—

A memorandum issued by the Admiralty to all the shipowners who are co-operating in the naval manœuvres, gives interesting information as to the procedure which is to be followed.

The area of the manœuvres is from England to Gibraltar and the South Atlantic, and is bounded by parallels 60 degrees and 30 degrees N. latitude, and the meridians 10 degrees E. and 20 degrees W. longitude. The following is the general programme :—

June 23.—The war vessels, simulating merchant steamers, start from Milford, Falmouth, Arosa Bay, and Gibraltar, as ordered :

Merchant steamers sail from Falmouth, Milford, and Gibraltar.

June 24.—War-ships on both sides may sail at any time after noon.

Merchant steamers within manœuvre area hoist red ensign.

June 29.—Cessation of departures of merchant steamers co-operating in the manœuvres.

July 2.—Manœuvres cease at noon.

Steamers carrying mails, passengers, live stock, chilled meat, green fruit, or vegetables will not be stopped.

Prize-taking.—Co-operating ships call at Falmouth or Milford Haven if outward bound, and at Gibraltar if homeward bound; and make their passages thence in company with other vessels, or otherwise, as may be directed by the senior naval officer. Vessels as they collect in the ports will be despatched along the trade route in groups of twelve or less. It is not expected that any ship will be delayed for more than sixty hours.

The enemy's men-of-war will be distinguished by a blue ensign on the triatic stay abaft the foremast, and it will be the duty of the merchant-ships to do their best to escape from the enemy, and to communicate any information they may possess to the Red fleet.

It is laid down that in order to capture a merchant steamer a cruiser must approach within three miles, fire three guns, and hoist a signal to stop. The steamer must then stop at once. At night the cruiser must approach within one mile, and throw her search-light on the steamer she wishes to stop, in addition to firing three guns. To complete the capture the steamer must be boarded, and the number of persons on board ascertained. Should the weather be unfit for lowering a boat, the cruiser must stand by the prize for at least an hour for the capture to be considered complete.

In the event of two or more steamers being in company when three guns are fired by the cruiser, only the vessels within three miles of the war-ship by day or one mile at night are to stop, and the cruiser has to complete the capture of those within the three-mile limit before pursuing the others. After being captured a merchant-ship will haul down the red ensign at the fore and proceed immediately on her voyage without communicating information to either side.

The Admiralty's Guarantee.—The original proposals for indemnifying ship-owners against loss have been made more comprehensive as the result of negotiations which have been carried through by the Steam-ship Owners' Protecting Associations—which, in the case of London alone, represent 8,000,000 tons—on the one hand, and the Admiralty on the other, and between whom Mr. Harry Miller was the chief medium of communication. The agreement, which has now been definitely accepted by both sides, provides amongst other things that the Admiralty will indemnify the ship-owners against:—

- a. Any loss or damage to the vessel or other interests from whatsoever cause, including the negligence of the ship-owners' servants.
- b. All claims, expenses, and liabilities, whether arising or incurred under contracts of affreightment on the voyage, or by reason of deviation, wrongful navigation, or otherwise.
- c. All loss or damage to the cargo from whatsoever cause.

For the first 30 hours' delay a sum at the rate of 4d. per gross ton—maximum £60 and minimum £40—will be paid. For every additional twelve hours the rate will be 2d. per ton. In the event of damage the ship-owner will receive 3d. per ton for each day's delay, while the vessel is being repaired, to be reduced to a penny a ton if and when the crew shall have been paid off. The Admiralty, it may be recalled, has covered the risks by insurance to the extent of £10,000,000.

Mobilisation.—The first step in the preparation for the manœuvres was taken on the 9th inst., by the mobilisation

at Chatham and Sheerness of the battle-ship "Royal Oak," and the cruisers "Bedford," "Blenheim," "Vindictive," "Scylla," and "Sappho," with twenty destroyers, all for service with the Blue Fleet. At Devonport the cruisers "Niobe" (flying the flag of Rear-Admiral E. H. Gamble), "Europa," and "Essex," with eleven destroyers, also mobilised for service with the Blue Fleet, and left for their destinations. The mobilisation at the Home ports of the ships for the Red Fleet took place on the 14th inst. Admiral Sir A. K. Wilson is in supreme command of the Red Fleet, and Vice-Admiral Sir W. H. May of the Blue.

The Manœuvres are divided into three stages :—

1. Mobilisation, completed on 14th inst.
2. Attacks on Coast Defence, June 13th-19th.
3. Tactical Exercises, June 20th-24th.
4. Commerce Protection, June 25th-July 2nd.

First act of hostility on part of enemy supposed to have been committed on 13th inst.; war declared on 14th inst.

"RED" SIDE (BRITISH).

Battle-ships (Channel).—Exmouth (flag-ship of Admiral A. K. Wilson), Russell, Albemarle, Duncan, Cornwallis, Triumph, Vengeance, Glory, Canopus, Goliath, Ocean, Illustrious, Prince George, Jupiter, and Cæsar.

Do. (Mediterranean).—Bulwark (flag-ship of Vice-Admiral Lord Charles Beresford), Queen, Irresistible, Implacable, Formidable, London, and Venerable.

Unarmoured Cruisers (Channel).—Dido, Juno, and Topaze.

Do. (Mediterranean).—Diana, Minerva, and Venus.

Do. (Reserve).—St. George, Theseus, Highflyer, Doris, Æolus, Sirius, Royal Arthur, Grafton, Gladiator, Hermione, Hawke, Edgar, Endymion, Talbot, Charybdis, Thetis, Spartiate, Terrible and Andromeda.

Armoured Cruisers.—(*First Squadron*): Good Hope, Devonshire, Argyll, Roxburgh, Antrim, and Hampshire.

Do. (*Third Squadron*): Leviathan, Carnarvon, Lancaster, and Suffolk.

Do. (*Fourth Squadron*): Euryalus, Hogue, and Sutlej.

Do. (*Reserve*): Cressy and Bacchante.

"BLUE" SIDE (ENEMY).

Battle-ships (Atlantic).—King Edward VII. (flag-ship of Admiral Sir W. H. May), New Zealand, Dominion, Hindustan, Commonwealth, Victorious, Majestic, and Magnificent.

Do. (*Reserve*).—Mars and Royal Oak.

Unarmoured Cruisers.—Arrogant, Amethyst, and Diamond.

Do. (*Reserve*).—Furious, Latona, Bedford, Vindictive, Scylla, Sappho, Niobe, and Europa.

Armoured Cruisers.—(*Second Squadron*): Drake, Duke of Edinburgh, Black Prince, Cumberland, Cornwall, and Berwick.

Do. (*Reserve*).—Essex.

The "Red" Fleet (British), under the command of Admiral Sir A. K. Wilson, thus numbers :—

- 22 battle-ships.
- 19 armoured cruisers.
- 25 unarmoured cruisers.
- 8 scouts.
- 8 gun-boats.
- 67 destroyers.
- 63 torpedo-boats.
- 23 submarines.

The battle-ships of the Reserve Divisions at the Home Ports, consisting of the Repulse, Resolution, Ramillies, Barfleur, Centurion, Hood, Empress of India, Nile, and Trafalgar, have also been mobilised, but what their duties are to be in connection with the "Red" Fleet has not yet been made known.

The "Blue" Fleet (Enemy), under the command of Vice-Admiral Sir W. H. May, numbers :—

- 10 battle-ships.
- 7 armoured cruisers.
- 11 unarmoured cruisers.
- 5 gun-boats.
- 57 destroyers.

The above details are as accurate as the information in our possession at the time of going to press, allows us to make them; but it is quite likely that some errors will be found later.

THE DESTROYER FLOTILLAS.

"Red" Side.

Portland.—Depôt-ships Sapphire, Sapphire II., Tyne, Aquarius; the scouts Patrol, Pathfinder, and Sentinel; the gun-boats Speedwell and Jason; and thirty-six destroyers.

Devonport.—Depôt-ship Blake; the scout Skirmisher; the gun-boat Sharpshooter; and eleven destroyers. One spare 30-knot destroyer.

Portsmouth.—The scouts Forward and Foresight; the gun-boats Spanker, Niger, and Seagull; and seven destroyers.

The Nore.—The depôt-ship Leander; the scouts Adventure and Attentive; the gun-boats Gossamer and Speedy; and eight destroyers.

Total destroyers in home waters, sixty-two.

Gibraltar.—The depôt-ship Barham, and five destroyers.

Grand total destroyers "Red" side, sixty-seven.

NOTE.—A composite division consists of: One River class destroyer, three 30-knot destroyers.

The torpedo-boats allotted to the "Red" side are stationed as below :—

Devonport	-	-	-	-	-	-	-	12
Portsmouth	-	-	-	-	-	-	-	19
Sheerness	-	-	-	-	-	-	-	20
Gibraltar	-	-	-	-	-	-	-	12

"Blue" Side.

Ireland.—The gun-boat Skipjack, and seven destroyers.

Channel Islands.—The depôt-ship Blenheim; the gun-boats Circe, Dryad, and Halcyon; and twenty-two destroyers.

Scotland.—The depôt-ship Hecla; the gun-boat Leda; and twenty-three destroyers.

Lagos.—The depôt-ship *Vulcan*, and five destroyers.

Grand total destroyers "Blue" side, fifty-seven.

After the first period of the manœuvres the following vessels will revert to nucleus crews:—

"Red" Side.—All destroyers and their depôt-ships specially completed for the manœuvres; all torpedo-boats specially completed for the manœuvres.

"Blue" Side.—All composite divisions.

This will leave the strength of destroyers for the remainder of the manœuvres as below:—

						"Red" side.	"Blue" side.
In home waters	-	-	-	-	-	36	29
At Gibraltar and Lagos	-	-	-	-	-	5	5

FRANCE.—The following are the principal promotions and appointments which have been made: Vice-Admirals—F. E. Fournier to Command of Manœuvre Fleet; L. A. Caillard to be a Member of the Superior Council of the Navy. Capitaines de Vaisseau—L. A. Donin de Rosière to "Patrie"; L. J. Pivet to "République"; E. P. A. Guépratte to "Jeanne d'Arc." Capitaines de Frégate—L. M. De la Monneraye, A. E. Le Golleur, E. J. L. Aubry, and J. M. Barnouin to be Capitaines de Vaisseau; E. N. Benoit to "Du Chayla"; M. P. De la Roche-Kérandraon to "Mousquat"; J. G. Jaime to "Kersaint."—*Journal Officiel de la République Française*.

It is stated that the Great Manœuvres of the French Fleet will be held between 3rd July and 4th August. Vice-Admiral Fournier has again been appointed to the supreme command, being temporarily granted the rank of full Admiral.

The Manœuvre Fleet will consist of the following:—The Active Squadron of the Mediterranean Fleet, under the command of Vice-Admiral Touchard, consisting of the six first-class battle-ships "Suffren," "Saint Louis," "Gaulois," "Iena," "Bouvet," and "Charlemagne"; the armoured cruisers "Condé," "Marseillaise," "Kléber," and the protected cruisers "Du Chayla," "Lalande," and "Galilée," with seven destroyers and two sea-going torpedo-boats.

The Reserve Division of the Mediterranean Fleet, under the command of Rear-Admiral Germinet, consisting of the first-class battle-ship "Brennus," "Charles Martel," and "Hoche," with the destroyer "La Hire."

The Squadron of the North, under the command of Vice-Admiral Gigon, consisting of the first-class battle-ships "Masséna," "Jauréguiberry," "Carnot"; the coast-defence battle-ships "Bouvines," "Amiral Tréhouart," "Henri IV.," with the armoured cruisers "Gloire," "Léon Gambetta," "Amiral Aube"; the protected cruiser "Forbin," and seven destroyers.

According to present arrangements the Mediterranean Squadron is to be off Algiers on 3rd July, the Reserve Division of the Mediterranean off Toulon, and the Northern Squadron off Oran; the three squadrons are to concentrate at sea on 5th July, and arrive off Algiers on the 6th.

The Battle of Tsu-Shima and its Effects on Naval Construction.—The *Temps*, in a recent article on the effect of the battle of Tsu-Shima on recent naval construction, quotes a Japanese officer of experience as saying: "The fighting qualities of the crew counts for more than the perfection of the *matériel*, all weapons being useless unless wielded by a practised and courageous arm."

Japan, Germany, England, and France have commenced to build vessels of 18,000 to 19,000 tons, but with the exception of this generally approved increase of tonnage, no nation has yet apparently settled satisfactorily the relative values of guns, armour, and speed, there being no identity of views in these respects.

Apart from this, it is certainly clear that there is a tendency to augment the calibre and increase the number of the heavier description of guns. Generally speaking, the 12-inch (305-mm.) is the heaviest gun adopted, and is to be mounted in all battle-ships building by Japanese, English, Americans, and French; the heaviest guns actually mounted in the German fleet are of 280-mm. (11-inch); but the new German battle-ships of 18,000 tons are to carry 305-mm. (12-inch) guns. In the concert in favour of heavy guns there is but one discordant note, and this is sounded in France, where the reporter of the Naval Budget has proposed a special type of battle-ship to be armed with 274-mm. (10·8-inch) guns.

The question of auxiliary armaments has caused much discussion in the Press. Should they be abolished? Yes, say some, because it is useless to have a ship encumbered with guns with less penetration and range than those of the main armament, and also the unification of the calibres is an important advantage. Not at all, say others; with an auxiliary armament you have an intensity and rapidity of fire quite unobtainable with the heavier guns. Without expressing an opinion, let us see what is being done abroad and by ourselves.

Our programme proposes ships carrying two classes of guns of heavy calibre. In England the "Dreadnought" has been armed solely with ten 305-mm. (12-inch) guns; the United States and Germany have not yet indicated their views; but Russia has ordered a battle-ship carrying twelve medium-sized guns. Japan, in view of her practical experience, might be considered the arbiter of the question, and is arming the two battle-ships she is constructing with twelve medium-sized guns.

As regards small guns, these are being retained by all Navies.

The second element of protective power, the armour, has also been much discussed. Some have expressed the opinion that the lessons of the battle of Tsu-Shima seem to show that the thickness of the belt may be reduced. England, however, does not appear to share this view, as the "Dreadnought" is to have a 305-mm. (12-inch) belt—a thickness of plating hitherto only given to the preceding ships of the "Lord Nelson" class. Germany also seems to be in favour of retaining the thickness of armour, as the new German battle-ships will have the same plating as their English contemporaries. The new French ships will carry the same armour as those of the 1900 programme; that is to say, a thickness of 280-mm. (11-inch).

Finally, as regards speed, the third element of power, there is no more agreement here than with the first two. Our programme provided for battle-ships of 18½ knots, since increased to 19 knots; England has gone one better, as the "Dreadnought" will have a speed of 20 knots. On the other hand, the estimated speed of the new Japanese battle-ships "Satsuma" and "Aki" would appear to be 18½ knots, and the latest Russian battle-ship is to have 18½ knots speed. The projected speed of the new German and United States battle-ships has not yet been made public.

Another question which has been much discussed is that of the abolition of armoured cruisers, which, in France, has been declared necessary. Other nations, however, have not treated this matter in such a radical fashion. Germany has lately increased her programme by the addition of 6 armoured cruisers, England is laying down 3, Russia has ordered a sister to the "Bayan," and the Japanese, since their victory, have laid down 4 of two different types. There is one important change here, however; up to the present, armoured cruisers have carried guns inferior to those mounted in battle-ships, and have also been given a thinner belt, but the new Japanese cruisers are to carry 305-mm. (12-inch) guns as their principal armament.

On the whole we need not consider the designs of the English "Dreadnought" and the Japanese "Aki" to be prompted by lessons learnt from the battle of Tsu-Shima. They signify a progress which has been gradually led up to, and would have probably been the same had there been no such battle in the Far East.

Hydrographical Service.—The *Temps*, recently, also, had an article on the French hydrographical service, to which it desired to call attention, fearing that in the discussion on the Naval Budget in the Chamber the necessity for reforms in this important department might be lost sight of.

The marine survey with the charts of the north and west coast of France, published between 1816-1835, is by the celebrated hydrographical engineer, Beautemps-Beaupré, but was never properly completed. At the dates these charts were first issued they answered admirably for the sailing ships of the period, but at the present time they are unequal to the demands of steam navigation and for the guidance of the torpedo flotillas, which should be specially acquainted with all the intricate channels, such as off the coast of Bretagne.

The progressive increase of the French Colonial dominions should also be accompanied, if not preceded, by complete surveys of the coasts; as a fact, with the exception of the coast of Tunis, none of this work has been yet completed. The surveying missions which are sent abroad without a properly considered programme and with a *personnel* deficient in technical training, have only been able to produce rough sketch charts, and the consequences of the uses of these imperfect surveys are only too well known in the cases of the stranding of the "Chateaurenault" off the coast of Anam, and the wreck of the "Sully" on the coast of Tonkin.

Three hydrographic missions are at present at work. One on the west coast of France for 6 months of the year, and two others continuously in Madagascar and Indo-China. On the coast of France the charts by Beautemps-Beaupré are being thoroughly revised, this work having been decided on after the striking of the "Charles Martel" in 1896 at the entrance of Brest on an uncharted rock, and of the "Hôche" in 1898 in the pass of Quiberon. The survey has taken 8 years to revise, work which Beautemps-Beaupré completed in four, and as he took 20 years to complete his survey of the north and west coasts, it can be calculated how long our ships will have to wait before they receive the new charts which are so urgently required. The fact is, that the mission has not the means for rapid work; the vessel appropriated for the service is 25 years old, and cannot steam more than 5 knots; moreover, she does not carry any steam-boats, and as the crew is constantly changed, new men have to be instructed in the work each year. In Madagascar, work

was commenced in 1887, but since this date only about one-third of the coast has been surveyed. It will thus at this rate take about 50 years to complete the survey.

In the Corps of *Ingénieurs Hydrographique*, the Navy possesses a *personnel* well capable of doing the work required, if only supplied with adequate means. About 1,200,000 francs (£48,000) is voted in the Budget for hydrographic purposes, which, if slightly increased, would be quite sufficient; but newer and faster surveying vessels must be provided, and this would entail an extra charge of 2,000,000 francs (£80,000), which might be spread over several years.

A circular has been issued from the Minister of Marine stating that in accordance with the advice of the *Conseil Supérieure de la Marine*, it has been decided to abolish all above-water torpedo discharges in all battle-ships and cruisers fitted with submerged tubes.—*Le Yacht, Le Temps*, and *Le Moniteur de la Flotte*.

UNITED STATES.—*The New Armoured Cruiser "Tennessee."*—The successful completion of the official trials of the new armoured cruiser "Tennessee," which took place on the Government course on 12th February, 1906, marks the addition to the United States Navy of one more of a class of ships of which the United States Navy is very justly proud. The average speed over the whole 80-mile course was 22.15 knots an hour.

The armoured cruiser which, in the earlier days of its development, was intended to hold something of a middle position between the battle-ship and the protected cruiser, has grown so steadily in size and power that the modern type, as represented by the "Tennessee," approximates in fighting efficiency to the battle-ship. This is evident at once when we bear in mind that the "Tennessee" carries as her main armament four 40-calibre 10-inch guns, whose ability to punish the enemy, even at the more distant ranges, is greater than that of the 12-inch guns mounted on the battle-ship "Iowa," for at 5,000 yards the 12-inch projectiles of the "Iowa" can, theoretically, penetrate, if they are capped, 9½ inches of Krupp armour, whereas the 10-inch projectiles of the "Tennessee" can, under similar conditions, penetrate 11½ inches. Moreover, these guns are protected by 9 inches of inclined Krupp armour, which is superior to the 14 inches of vertical turret armour carried by the "Iowa." In a comparison of the secondary batteries, the "Tennessee" shows a superiority in total energy, since she carries sixteen 50-calibre 6-inch guns, each with a muzzle energy of 5,838 foot-tons, and protected by 5 inches of Krupp armour, as against eight 8-inch guns of 7,500 foot-tons, and six 4-inch guns of about 1,000 foot-tons energy, having about the same protection. The total muzzle energy of a single discharge of all the guns of the "Tennessee" amounts to 202,224 foot-tons, whereas the total muzzle energy of a single discharge of all the "Iowa's" guns amounts to only 169,940 foot-tons. Furthermore, the great superiority of speed possessed by the cruiser (22½ knots as against 17 knots) and the higher velocity and flatter trajectory of her projectiles, would enable her to choose a fighting range and bearing with relation to the battle-ship which would put the low velocity guns of the "Iowa" at a disadvantage, and yet enable the "Tennessee" to deliver her fire with telling effect.

Our armoured cruiser fleet consists of twelve vessels, two of which, the "New York" and "Brooklyn," are now somewhat obsolete, although they are undergoing, we believe, a re-armament and overhauling which

will greatly increase their efficiency, at least in respect of the power of the battery. The other ten ships are divided into two classes, in the earlier of which, known as the "California" class, are six ships, namely, the "California," "Colorado," "Maryland," "Pennsylvania," "South Dakota," and "West Virginia." These fine vessels are 502 feet long, 69 feet 6½ inches in beam, and on a 25-foot 1-inch draft they displace 13,680 tons. Each carries four 45-calibre 8-inch guns in two turrets, protected by 8 inches of Krupp steel, and fourteen 6-inch guns, protected by 5 inches of Krupp steel. They have a continuous water-line belt 6 inches in thickness, and their speed is in every case from 22 to 22½ knots an hour.

The "Tennessee" class are larger vessels by about 1,000 tons, the increased displacement being secured by carrying the beam out to 72 feet 10 inches and increasing the draft to 25 feet. The water-line and side armour have been re-arranged and somewhat extended as compared with the "California" class, and the speed is about the same. The most marked improvement, of course, is in the main battery and its protection, the four 8-inch guns, protected by 8 inches of armour, giving place to four 10-inch guns behind 9 inches of armour, while two more 6-inch guns have been added to the secondary battery.

The 10-inch guns are mounted in two electrically-controlled, balanced, elliptical turrets, each with an arc of fire of 270°. Four of the 6-inch guns are mounted in independent casemates on the main deck; one at each corner of the central superstructure. The other twelve 6-inch guns are mounted on the gun deck in broadside, and each gun is isolated by splinter bulkheads of nickel steel from 1 to 2 inches thick. The whole of the 6-inch battery is protected by 5 inches of armour. Four of the 6-inch guns can fire dead ahead and four dead astern. Of the twenty-two 3-inch guns, six are carried in sponsons on the gun deck, six are mounted in broadsides on the gun deck, three on each beam in the centre of the 6-inch battery, while on the main deck immediately above these and mounted in broadsides between the 6-inch gun casemates are ten 3-inch guns, five on each broadside.

Each ship also carries four of the new 21-inch turbine-driven Whitehead torpedoes. (See Naval Notes in the JOURNAL of February, 1906.)

The hull is protected by a water-line belt of 5 inches of armour, which is worked in vertical strakes amidships, the strakes extending 17 feet 3 inches in height from the protective deck to the gun deck. Throughout the machinery and magazine space this armour is 5 inches in thickness, while forward and abaft it diminishes to 3 inches. This 5-inch armour extends also in the wake of the casemated 6-inch gun entirely up to the main or upper deck. Two-inch nickel steel has been worked in the wake of the 3-inch battery. The barbettes of the 10-inch guns, which are from 4 to 7 inches in thickness, extend from the protective deck to 5 feet above the main deck. The turrets for these guns have a sloping front or port plate 9 inches in thickness, which may be taken as the equivalent of a 12 or 13-inch vertical plate.

Steam is supplied by Babcock & Wilcox boilers to twin vertical triple-expansion engines of 23,000-I.H.P. The "Tennessee" was constructed by William Cramp & Sons, who also built the armoured cruisers "Colorado" and "Pennsylvania," above mentioned, and also our first armoured cruisers, the "New York" and "Brooklyn." — *Scientific American*.

Bureau of Navigation Report.—In his annual report, Rear-Admiral George A. Converse, Chief of the Bureau of Navigation, presents a strong argument in favour of the creation by law of a General Staff for the Navy, basing his conclusions upon an experience of forty years in the Navy. It is necessary to the efficiency of the Navy that there should be in the Navy Department some "military administrative authority" to co-ordinate the technical work of the bureaus; to be responsible to the Secretary for the organisation and preparedness of the fleet; and to advise in all military matters.

"Willingly or unwillingly," the Admiral says, "the nation has assumed responsibilities, the burden of which we may not evade. We must play the game. These responsibilities and expanding commerce of increasing volume, reaching farther and farther from our shores, with our long coasts, fronting two oceans and a great sea, bordered with numerous wealthy cities, each a centre of ocean-borne trade, demand acute national provision, and the earnest study of possible and probable international situations. The nature of these clearly indicates the necessity for a powerful and efficient Navy, the possession of which is not the end, but the means to the all-desirable end, their peaceful solution.

The lesson of greatest moment for the Navy, taught by the Russo-Japanese war, is the importance of the *personnel*, the use of which word he applies not only to the active fleet, but to the Department. Although prominence is accorded to the General Board in the new Navy Regulations recently issued, while this is proper, it is not enough. The Board's status and duties should be defined by law.

"The keynote of all effort in the Navy should be efficiency," Admiral Converse continues. "This must start at the top. The chief duty of the Navy is to fight. Administrations may change, but the Navy's chief does not. The question is, then: Is our departmental organisation the best we can have for efficiently providing, organising, preparing, and directing our fleet? In the opinion of the bureau it is not. A fair efficiency can be created under almost any form of organisation where earnest efforts are made to administer it, but common-sense dictates that the highest naval efficiency—demanded as never before for national success in war—must come from knowledge born of study, training, and experience—a knowledge that is essential to intelligent organisation and preparation. A civil officer at the head of each department is essential to the genius of our form of Government, in order that the civil power shall predominate, and that the policy of a department shall accord with the policy of the administration. Each succeeding Secretary should find the Navy he is to wield as an instrument of peace or a weapon of war, a machine well adjusted and ready for the purposes of the administration. It should come into his hands as perfect as possible in the organisation and preparation of its *personnel* and units of fighting. This signifies a continuous administration of purely military details that the present organisation of the Department does not insure or accomplish efficiently."

The Admiral finds that the Naval War College, the Office of Naval Intelligence, and the General Board each perform its respective duties satisfactorily. "But," he says, "this is not administrative work. The deficiency in the organisation of the Department lies in the lack of military initiative and directive force—military administration under the Secretary.

"Theoretically, the bureaus supply, each according to its duties, features of military administration. The duties of the Chief of this

bureau, as defined by the regulations, give him the character of chief adviser or an executive in most matters of a military nature; but, in accordance with the law, each Chief of bureau performs his duty under authority of the Secretary, and the orders of each are considered as emanating from him. The co-ordination of the work of all the bureaus must, therefore, proceed through the Secretary.

"Practically, the bureaus supply only one portion of the military administration, viz., supervision over details, because the time of each bureau Chief is fully occupied in administering his own bureau. The most important and necessary part of the military administration of the Department, initiative and directive force, is lost sight of in large degree.

"It has become more and more evident as the Navy increases, that some military administrative authority should be introduced in the Department, such authority to co-ordinate the work of technical bureaus, and be responsible to the Secretary for the organisation and preparedness of the fleet for war, and to advise in all military matters. It should be his duty to initiate the steps necessary to carry out the policy of the Department as formulated and directed by the Secretary, and under his command to direct the forces in carrying out that policy. The effect of a continued policy of military administration cannot be otherwise than beneficial to efficiency. It is not claimed that it will prove a cure for all evils. Changes will no doubt be required from time to time to perfect the organisation; but the bureau is convinced, from a study of the conditions now existing in the Service, that it is necessary for the efficiency of the Navy. Its necessity was recognised in our last war in the formation of a Board which occupied a place in the Department itself, where the latest information from all points could be laid before it promptly and its advice sought and acted upon with despatch.

"In a really serious war, the demands of necessity will compel the formation of some organisation for the administration of military features, by whatever name it may be called. Its creation and organisation should not be delayed until war forces action."

Admiral Converse also emphasises the need of a provision for two vice-admirals for the command of the North Atlantic and Asiatic Fleets. He also renews his urgent recommendation of last year for legislation which will enable officers to attain command and flag rank at an earlier age. He says:—

"We are training officers in the fleet in command of ships, then retiring them before they can possibly be utilised or trained in subordinate flag commands, and therefore before their abilities are discovered for fleet commands. This condition results in a waste of time, talent, and energy. It is dangerous, extravagant, manifestly ineffective, and therefore inefficient."

Attention is called to the injustice of that provision of the *Personnel Act* which causes naval officers to suffer a reduction of fifteen per cent of pay when on shore duty, and its repeal is recommended.

Regarding desertions, Admiral Converse says that an analysis of this subject during the past year shows that about one-third of the whole number of desertions was in the rating of coal passers. He believes that this can be largely avoided by selecting men for that rating from the apprentice seamen under training at the various training stations. Public sentiment, he adds, can decrease desertions in the Navy by denounce

those who choose this unworthy method of escape "from their fancied ills or disappointments." Ninety-five per cent. of the petty officers are citizens of the United States, and 75 per cent. are native born. Of the enlisted men other than petty officers, 90 per cent. are citizens, and 84 per cent. are American born. Of the total enlisted force of the Navy, 92 per cent. are citizens of the United States, of whom 81 are native born. Of the 41,000 applicants for enlistment in the Navy last year, 28,000 were rejected for physical disability and other causes.—*U.S. Army and Navy Journal*.

MILITARY NOTES.

HOME.—The following are the principal appointments which have been made :—

Generals—General H.R.H. George Frederick Ernest Albert Prince of Wales and Duke of Cornwall and York, K.G., K.T., K.P., G.C.S.I., G.C.M.G., G.C.I.E., G.C.V.O., I.S.O., Colonel-in-Chief the Royal Fusiliers (City of London Regiment), Royal Marines, the Royal Welsh Fusiliers, the Queen's Own Cameron Highlanders, the King's Royal Rifle Corps, and the 1st Duke of York's Own Lancers (Skinner's Horse), to be Colonel-in-Chief of the following Regiments of the Indian Army (dated 1st January, 1906) : 18th (Prince of Wales's Own) Tiwana Lancers, 26th (Prince of Wales's Own) Light Cavalry, 38th (Prince of Wales's Own) Central India Horse, 39th (Prince of Wales's Own) Central India Horse, 1st (Prince of Wales's Own) Sappers and Miners, 14th (Prince of Wales's Own) Sikhs, 61st (Prince of Wales's Own) Pioneers, 130th (Prince of Wales's Own) Baluchis, and 1st (Prince of Wales's Own) Gurkha Rifles (the Malaun Regiment). General H. H. Viscount Kitchener, G.C.B., O.M., G.C.M.G., to be Colonel Commandant, Corps of Royal Engineers.

Lieut-General — Lieut-General Sir G. B. Wolseley, K.C.B., to be General.

Major-Generals—Major-General H. L. Smith-Dorrien, C.B., D.S.O., to be a Lieut.-General. Major-General H. F. Grant, C.B., to be a Lieut.-General. Major-General A. H. Paget, C.V.O., C.B., is promoted to the rank of Lieut.-General. Major-General H. C. O. Plumer, C.B., to Command the 7th Division. Major-General A. R. Martin, C.B., I.A., to be Adjutant-General to the Staff in India.

Colonels—Colonel E. A. Altham, C.B., C.M.G., from h.p., to be an A.A.G. Lieut.-Colonel K. McLeod, M.D., retired, I.M.S., to be Honorary Physician to the King, and is granted the honorary rank of Colonel. Colonel T. P. B. Ternan, C.M.G., D.S.O., from an A.Q.M.G., to be a Brigadier-General, to Command the Standerton Sub-District, and is granted the temporary rank of Brigadier-General whilst so employed. Colonel (temporary Brigadier-General) J. A. H. Pollock, C.B., I.A., to be Major-General. Colonel (temporary Brigadier-General) R. B. Adams, V.C., C.B., A.D.C., I.A., to be Major-General. Colonel A. W. L. Bayly, C.B., D.S.O., A.D.C., I.A., to be Major-General. Colonel (ranking as Major-General) F. E. Mulcahy, C.B., A.O.D., Principal Ordnance Officer (Director of Equipment and Ordnance Stores), is granted the hon. rank of Major-General. Colonel (ranking as Major-General) H. Thompson, C.B.,

Director-General, A.V.S., is granted the hon. rank of Major-General. Colonel (local Brigadier-General) G. M. Bullock, C.B., Commanding the Forces in Egypt, is granted the temporary rank of Major-General. Lieut.-Colonel and Brevet Colonel J. H. Poett, C.B., Dorsetshire Regiment, to be A.A.G., Command Staff, India. Colonel S. H. Harrison, from an Officer in Charge of Records, to be a Brigadier-General, to Command a Grouped Regimental District, and is granted the temporary rank of Brigadier-General whilst so employed. Colonel W. B. Capper, from Director of Military Education, to be a D.A.G., and is granted the temporary rank of Brigadier-General whilst so employed. Colonel H. B. B. Watkins, I.A., to be a D.A.G., and is granted the temporary rank of Brigadier-General whilst so employed. Colonel C. L. Woolcombe, to be a Brigade Commander, and is granted the temporary rank of Brigadier-General whilst so employed. Colonel F. J. Aylmer, V.C., to be a Brigade Commander, and is granted the temporary rank of Brigadier-General whilst so employed. Colonel H. Mullaly, C.B., is granted the temporary rank of Brigadier-General while in charge of the Mobilisation and Intelligence Sections of Division of Chief of Staff. Colonel (temporary Brigadier-General) F. H. Plowden, C.B., a Brigade Commander in India, is promoted to the rank of Major-General. Colonel (local Major-General T. E. Stephenson, C.B., Commanding Transvaal District, is promoted to the rank of Major-General.

AUSTRIA-HUNGARY.—*Grand Manœuvres for 1906.*—Manœuvres of the combined arms take place as usual this year towards the end of the training period. This year, unfortunately, however, owing to political reasons, corps on the other side of the Leitlea, the IVth, Vth, VIth, VIIth, XIIth, and XIIIth, will have to content themselves with regimental manœuvres, whilst in Austria the IIIrd, VIIIth, IXth, Xth, XIth, and XIVth Army Corps will carry out manœuvres as army corps, and the 1st and IInd Army Corps will manœuvre against one another in Silesia before the Emperor.

In these last manœuvres there will be on each side 3 infantry divisions, 1 cavalry division, strengthened corps artillery, scientific troops and institutions, making up a total strength of 96 battalions, 66 squadrons, 180 batteries, 2 cavalry machine gun groups, and 8 pioneer companies, who will take part in them. The following will, in addition, participate: 2 balloon divisions, 2 telegraph divisions, mechanical supply transport, several mobile field kitchens, and some administration and medical transport. The companies, including those of the pioneer battalions, will take the field 130 strong, and the cavalry machine gun groups at a strength of 40 men each. The mobile field kitchens will be similar to the Russian ones, will be drawn by 2 horses, and will be used experimentally with each corps, many of various types will also be practically tried. The employment of armoured motors does not appear to be in contemplation; on the other hand, one or other of the completed barrel-recoiling Q.F. batteries will be brought on to the manœuvre ground for inspection by the Emperor. Both sides will be provided with wireless telegraph stations. Cyclists, motor cyclists, and motor drivers will be thus distributed: To each brigade, 1 cyclist; to each division, 3 cyclists, 2 to 4 motor cyclists, 2 to 4 motor drivers (the higher figures refer to cavalry divisions); to each army corps, 6 cyclists, 4 motor cyclists, 4 motor drivers; to the Manœuvre Staff, 4 to

6 motor cyclists, 4 to 6 motor drivers. The greater portion of the motor cyclists and drivers will be taken from the Volunteer Motor Corps.

In addition to the manœuvres in Silesia, the Adriatic naval landing manœuvres have a special interest. In these the following will take part: The strengthened summer squadron (Navy and Mercantile Marine) and troops from the Zara Military Command, with 4 battalions, companies 130 men strong, and with a mountain machine gun group of 40 men, the 23rd Landwehr Infantry Regiment of 4 battalions, 1 squadron and several mountain artillery batteries. The details of these combined manœuvres have still to be worked out; they will, however, take place in the neighbourhood of Sebenico, and are designed to confirm the necessity of this auxiliary base.—*Internationale Revue über die gesamten Armeen und Flotten.*

BULGARIA. — *Regulations for the Employment of Q.F. Guns.* — The following is a brief summary of the regulations issued by the Bulgarian Government for the employment of Q.F. guns, with which the Army has been recently armed:—

The Q.F. gun does not give its full effect if it is employed in slow continuous fire. Artillery should therefore only fire when a really favourable objective presents itself, and then resort to its full rapidity of fire. During the action the artillery is either in position, or watching or waiting. When watching, the guns are in battery, concealed from view, ready to fire as soon as the observers signal an objective. When waiting, the guns remain on their limbers, the battery close to its position for action, the men resting, ready at the first signal to gain the selected position.

As a rule, artillery keeps itself outside the zone of infantry fire; that is to say, about 2,000 yards or more; but at decisive moments it should not hesitate to support the infantry, and remain exposed to the hottest rifle fire. It is often convenient to keep the largest possible portion of the batteries in waiting or watching, and only to place in action the number of batteries required by the situation. Changes of objective are thus avoided, and emplacement occupied not prematurely unmasked. At the commencement of a battle it is frequently of advantage to devote oneself entirely to a fight with the adversary's artillery. As long as one is ignorant of the strength and position of the latter, it is often expedient to open fire with only a few batteries distributed along a wide front (300 yards per battery), and employ their full rapidity of fire to make the enemy unmask himself.

In the offensive, at the commencement of the advance guard engagement, the artillery is distributed on a wide front, and only engages the number of batteries strictly necessary. The batteries thus engaged make use of their utmost rapidity of fire, and must not fear frequent changes of position. In the preparation for the attack the artillery will endeavour to gain the upper hand of the hostile artillery; but it must not be imagined that the latter is destroyed because it momentarily ceases firing. All batteries acting in the same offensive sector should be under the orders of one single commander, including heavy artillery batteries, if there are any. Artillery should, above all, endeavour to act with the greatest efficacy. Anxiety to obtain cover should only be a secondary consideration.

The objectives to be preferably selected are the enemy's infantry, especially when in motion, and the batteries coming into action. As soon as the infantry is engaged, the artillery supporting the attack is broken up. The greater portion of the batteries support the infantry by their fire as long as possible, whilst avoiding the risk of its becoming dangerous for them. At this moment it increases the intensity of its fire, either to fight against the hostile artillery, or to deal with his reinforcements coming into the firing line, or to defeat all counter-attacks which may arise. Some batteries are meant to accompany the attack; advancing in *échelon*, they fire exclusively on the hostile infantry or on obstacles interfering with their own infantry's advance. Attempts should be made, as far as possible, to operate from the flanks against the enemy. The action of field artillery on earthworks being insignificant, artillery will not endeavour to destroy them, but will devote itself to action against the infantry occupying them; the employment of guns with curved fire is therefore the most useful.

In the defensive, the best positions are reserved for the artillery, and very great importance is attached to its defilade. The artillery endeavours to catch the hostile artillery at the moment of its deployment, so as to inflict the greatest possible losses on it; it should therefore be placed under such conditions that its concentrated fire may readily be brought to bear on the probable positions of the hostile artillery. The artillery is under the immediate orders of the division general or of the detachment commander, and the senior artillery officer commands that arm. On him, under instructions from the commander of troops, devolves the issue of instructions to the artillery brigade-division commanders, he allots their positions to them, and gives them orders with regard to opening fire and changes of position. When several divisional artillery units are massed in the same action, they are placed under the orders of the same commander. The artillery commandant, so as to be thoroughly conversant with the intentions of the commander of the troops, accompanies the latter during his reconnaissance, and receives from him a general indication of the zone to be occupied by the artillery; he then partitions this zone and the objectives amongst his brigade divisions. As has been already said, the artillery keeps itself out of the zone of infantry fire. The ammunition wagons carrying common shell are most carefully placed under cover. Whilst the artillery remains under cover while waiting, everything is prepared so that fire may be opened at once when required. An officer is sent in advance to survey the ground and the situation. Batteries are not always placed in line; they are always *écheloned*, with intervals of at least the front of a battery in width and two fronts of a battery in depth, either towards a flank when they are on the right or left of the line; or checkerwise; the distances, intervals, and the number of batteries of each *échelon* are variable. In changes of position a distinction is made with regard to those carried out in order to escape the hostile artillery's aimed fire; these changes should be at least from 700 to 800 yards. They are made by *échelons* of batteries or of brigade-divisions. The distance between *échelons* should be such that two *échelons* should not be hit by the bursting of the same shell (consequently at least 200 yards). To brigade-division commanders is entrusted the detailed assignment and distribution of objectives amongst their batteries. The artillery commandant organises the service of observing the effect of the firing by means of scouts sent forward long distances, and consist of an officer with 2 to 4 men.—*La France Militaire*.

FRANCE.—*Law of the 21st March, 1905, on Army Recruiting.*—Military service is compulsory on all, and lasts for a period of 25 years, viz. :—

Regular Army	-	-	-	-	2 years.
Reserve of Regular Army	-	-	-	-	11 „
Territorial Army	-	-	-	-	6 „
Reserve of Territorial Army	-	-	-	-	6 „

Every year, at the beginning of January, the Mayors arrange the census lists of young men who attained the age of 20 years during the preceding year, and who are domiciled in one of the communes of the Canton. Everyone entered on them can, up to the 15th February at latest, furnish proof of any infirmities or illness rendering him unfit for military service. The declaration is made at the town hall of his commune, and is supported by proper certificates. Young men omitted from the census lists of the preceding classes, are entered on the census tables of the class which is called out after the omission has been discovered, and they are liable to all the obligations incumbent on them as if they had been entered at the proper time. At the same time, they are finally free from all obligation to serve at the age of 50 at the latest.

The Council of Revision classifies young men in 4 categories, viz. :—

1. Fit for the combatant branches.
2. Fit for the non-combatant branches.
3. Put back.
4. Unfit for all service, combatant or non-combatant.

Those put back and passed as fit the following year for service in the combatant branches have to serve for 2 years in those branches; the remainder are enrolled in the non-combatant branches or exempted.

In peace time if two brothers are inscribed the same year on the census lists, or form part of the same calling to the colours, if there is disagreement between them, the younger of the two is, on his application, only enrolled after the obligatory period of service of the other brother. The man who, at the time the Council of Revision is sitting, has a brother already serving with the colours, is also not enrolled, on his application, until after the latter has completed his service. In peace time respite from enrolment, renewable from year to year up to the age of 25, may be granted by the Council of Revision to young men who apply for it to the Mayor of their communes after the publication of the census lists. For that object, those interested must prove that it is of the utmost importance that they should not at once be taken from their work, on account of their being either the support of the family or on account of their studies, or their apprenticeship, or on account of their agricultural, industrial, or commercial pursuits, either on their own or their parents' account, or on account of their residence abroad.

The families of those young men who, before their departure to the colours, were sole supporters of their families, may, in peace time, receive on their application a daily allowance of 65 centimes whilst those young men are serving with the colours. The number may not exceed 8 per cent. of the contingent. This allowance may also be granted to the families of soldiers who, whilst still serving with the colours, prove that they are the sole support of a family. Their number may not exceed 2 per cent. of the contingent. The applications should be addressed to the Mayor of the commune where they reside.

Men belonging to the Reserve of the Regular Army are obliged to take part in two manoeuvres, each extending over a period of four weeks. Men of the Territorial Army are obliged to take part in drills for a period of two weeks. Men of the Territorial Reserve are liable to be called up for review. Such men who are told off to guard lines of communication and important points on the coast, or who are employed to assist the artillery in fortified places or works on the coasts, may be called out for special drills, not exceeding 9 days, during the total period of 6 years passed in the Reserve of the Territorial Army. Reservists who are fathers of 4 living children have the right to be passed definitely into the Territorial Army. The father of 6 living children is entitled to be passed into the Reserve of the Territorial Army. Soldiers who have completed at least 3 years' service, or who have served in the Colonies, are exempted from one of the two drill periods in the Reserve.

ENGAGEMENTS AND RE-ENGAGEMENTS

I. *Voluntary Engagements.*

Home Troops.—Voluntary engagements may be contracted for the infantry, cavalry, artillery, engineers, and transport for periods of 3, 4, and 5 years. Engagements for 3 years are received from the 1st February to the 31st March, and from the 1st October to the 30th November, without limit as to numbers. Those for 4 and 5 years are received throughout the year without limit as to numbers. Engagements for 3 years will continue to be received up to the putting into force of the law of the 21st March, 1905, under the conditions laid down by the law of the 15th July, 1889. Engagements for 4 and 5 years carry with them the right to the high rate of pay, from the commencement of the 3rd year's period of service with the colours, and to a bounty proportional to the time the soldier engages to remain with the colours in excess of the three first years. In order to contract a voluntary engagement, the candidate must be at least 18 years of age, and fulfil all the physical conditions laid down for the branch of the service. The conditions of height vary, for the different branches of the service, from 5 feet 2½ inches to 6 feet 2½ inches, with the exception of the infantry, for whom there is no minimum or maximum limit of height. Tailors, bootmakers, saddlers, harness makers, and armourers, are admitted without respect as to height.

Foreign Legion.—Foreigners enlisting should be at least 18, and at most 40 years of age, and be 5 feet 2 inches in height. Frenchmen belonging to the reserve of the Regular or of the Territorial Army, are permitted to contract, as foreigners, engagements for 5 years with the Foreign Legion. They must produce: 1st, their small book or release from the Service; 2nd, a certificate from the Mayor of their last place of residence, proving the identity of the man, and if he is single, married, or a widower, and, in the latter cases, the sex and age of each of his children. Frenchmen who have not fulfilled their military obligations may, exceptionally, be authorised by the War Minister, to enlist, as Frenchmen, in the Foreign Legion.

Native Troops.—Every native may enlist in a native corps provided he is at least 17, and at most 35 years of age, and of the required height. Every young man desirous of enlisting must procure the following documents on unstamped paper, viz.: a birth certificate; consent of father, mother or guardian, if the candidate is under 20 years of age; certificate

of good morals; consent of the commander of the corps he desires to enlist into. The candidate must then go, with these documents, to the commandant of the recruiting office of his district, to undergo a medical examination and to receive a certificate of fitness. He may also go direct to the commander of the corps in which he wishes to enlist to obtain his certificate of physical fitness. The enlistment is then concluded at the town hall of the principal place of the district.

Colonial Troops.—Voluntary enlistments are received for colonial troops: after the completion of 19 years of age, for 5 years; after the completion of 20 years of age, for 4 years; and after 23 years of age, for 3 years. At the same time, pupils from the military preparatory schools, and young men of special professions (tailors, harness-makers, shoe-makers, farriers, musicians, etc.), may enlist at 18 years of age for 5 years, as regards the former, and for 3 years as regards the latter. Voluntary enlistments of 4 or 5 years entitle the recruit to a bounty of 100 and of 200 francs respectively at the time of starting to join. The consent of the commander of the corps is necessary, whatever the period of enlistment may be. In addition, young men recently entered on the census lists may, from the 15th January to the 1st April, of the same year, contract an engagement valid until the release of the class to which they belong.

II. *Re-engagements.*

Soldiers of all branches of the Service, whether home or Colonial troops, may contract re-engagements for 1 year, 1½ years, 2 years, 2½ years, and 3 years. Private soldiers can only enter on a re-engagement of 1 year for the Colonial troops, the Paris sapeur-pompier regiment, the mounted branches (cavalry and artillery), and for a certain number of frontier district corps selected by the War Minister. Soldiers belonging to Colonial corps, the regiment of sapeur-pompier, and non-commissioned officers belonging to home troops may, in addition, re-enlist for 4 or 5 years. Every soldier actually serving may re-engage if he has 1 year's service in the home and 6 months' service in the Colonial troops. The same option is given to discharged soldiers who have left the Service for less than 2 years, if they desire to serve in the Home Army, and to men of less than 36 years of age if they wish to serve with the Colonial troops. Re-engagements are renewable up to a total period of 15 years for non-commissioned officers of the Home Army, for soldiers of all ranks of the Colonial Army, and for the sapeur-pompier regiment, and for 5 years for corporals, lance-corporals, and men of the Home Army. Every soldier remaining in the Service for a period longer than the legal one is entitled to a high daily rate of pay from the commencement of the 3rd year of his service with the colours. Every soldier of the Home Army who enlists or re-enlists so as to bring his period of service up to 4 or 5 years, is entitled to a bounty proportionate to the time he engages to pass with the colours in excess of the first 3 years. In the Colonial Army the bounty is payable at the commencement of the 3rd year of service. Non-commissioned officers of all branches of the Service remaining with the colours in excess of 5 years are entitled to a special rate of pay at the commencement of the 6th year of service. Soldiers of all branches of the Service who leave the colours after 15 years' effective service are entitled to a pension proportionate to the length of the service; after 25 years they are entitled to a retiring pension.

GERMANY.—*German Colonial Troops.*—With the development of her Colonies and the extension of her *Welt Politik*, Germany has for some years been obliged to permanently maintain a large number of Colonial troops, and in addition to despatch considerable forces beyond the seas—at first to China in 1900, and more recently to South-West Africa, to quell the native revolt, which is still in progress. In the following summary, borrowed principally from the *Internationale Revue über die gesamten Armeen und Flotten*, no account is taken of the China Brigade of Occupation, which will no doubt shortly return to Europe, nor of the considerable reinforcements sent to German South-West Africa to quell the insurrection, to which allusion has been made.

Troops of German East Africa were raised by a law of the 23rd March, 1891; in the 1905-6 Budget a sum of 2,322,000 marks was provided for it, plus 479,500 marks for the flotilla. These troops are for the most part natives, and include 220 Europeans, viz.:—47 officers, 26 doctors, 22 military officials, 125 non-commissioned officers, and 1,471 natives, of whom 5 are officers and 126 non-commissioned officers; the whole are divided into 12 companies. The Governor also commands the troops.

Cameroon Troops are organised by a law of the 9th July, 1895, and are either about to be, or have already been, increased by 2 companies; not including these, the expenditure for 1905-6 amounted to 1,158,000 marks. They consist of a staff, 8 field companies, and 1 dépôt company and an artillery detachment. The effective is 145 whites, or 40 officers, 11 doctors, 13 military officials, 81 non-commissioned officers, and 1,170 natives, of whom 58 are non-commissioned officers and 38 bandsmen.

Togo has only a police force; it is only mentioned here because they are included in the chapter on Colonial expenditure. The police force costs 104,000 marks a year, and consists of 4 white non-commissioned officers for 150 natives.

South-West Africa. — Contrary to those of the above-mentioned Colonies, the troops of German South-West Africa are entirely European. Organised according to the law of the 9th July, 1895, they cost 2,407,327 marks a year, and normally consist of: 30 officers, 12 doctors, 11 military officials, 100 non-commissioned officers, and 453 men. Their reinforcement by the calling to the colours of European Colonists is provided for, and was carried out at the time of the present insurrection.

Kiao-Tchau. — The troops here are also European. The 1905-6 Budget provided 2,711,000 marks for their maintenance. They consist of 1 marine infantry battalion, 1 of marine artillery, a naval gun detachment, a naval detachment, and arsenal detachments, which are supplied from the dépôts in Europe. The average effective present in the Colony is: 73 officers, 22 military officials with commissioned rank, 300 non-commissioned officers, and 2,292 men (naval and military included). For the past two years it is believed that the progressive organisation of native infantry and naval units officered by Europeans has been proceeded with. The other German Colonies have merely a police force with European officers. Their effective is as follows: *New Guinea*, 7 Europeans, 282 natives; *The Carolines*, 3 Europeans, 75 natives; *Marshall Islands*, 13 natives; *Samoa*, 2 Europeans, 60 natives.

In conclusion, the following table gives the effectives of the 4 Colonies most amply provided with troops, fit at the present time for war:—

	European.						Natives.	Grand Total.
	Officers.	Doctors.	Military Officials.	N.C.O.s.	Men.	Total Europeans.		
German East Africa	47	26	22	125	—	220	1,471	1,691
Cameroons	40	11	13	81	—	145	1,170	1,315
German South-West Africa	30	12	11	100	455	606	—	1,212
Kiao-Tschau	73	—	22	300	2,292	3,374	60	3,434
	190	49	68	606	2,745	4,345	2,701	7,652

Wireless Telegraphy in South-West Africa.—In the beginning of the Herero uprising, the German troops used heliographs for signalling whenever the existing wire connections failed. This service was satisfactory in clear weather, except for the drawback that the communicating stations had to "seek" each other beforehand—a feat possible only in case the approximate position of each is known.

It was accordingly decided to use wireless telegraphy. The Gesellschaft Für Drahtlose Telegraphie, of Berlin, supplied the apparatus, which was mounted by the aerostatic battalion. Three stations were organised, viz., two wagon detachments and one cart detachment, the staff including four commissioned officers, four non-commissioned officers, and twenty-seven men. Gas balloons were used to raise the antennæ.

These stations were first used in practical operation in connection with the attack made against the Hereros near Waterberg. Each of the three detachments was provided with a wireless station, and though the men were not very well trained in the limited time allotted, the troops nevertheless succeeded in maintaining a permanent mutual communication. For transmission up to about 100 kilometres (62 miles) recording telegraphs were used, whereas for greater ranges up to 150 kilometres (93 miles) the Morse signals were received by telephone. The latter course was exclusively adopted later on. While the antennæ were 200 metres in length (656 feet), the men did not always succeed in raising the full length of the wire, the drift of the balloon being mostly too small, owing to the considerable altitude of the ground. This obviously decreased the range of the stations. The dryness of the air and the frequency of atmospheric discharges, as well as storms of whirlwinds, were other unfavourable factors. Moreover, the dry cells were damaged by the sudden changes in temperature. The projectiles of the enemy obviously were frequently directed against the balloons, which marked the position of the German troops. The balloons, on the other hand, rendered good service to the German detachments, marking as they did the direction of marching.

The whole of the wireless telegraph plant was temporarily placed out of service in October, 1904, in order to allow for the necessary preparations before proceeding to the new theatre of war situated southward, some time being occupied in repair work. Three other outfits had

arrived in the meantime, which, however, were not provided with skilled operators.

As regards the relative merits of the various types of station, the wagon stations are said to be more readily transportable than the old cart stations, which, owing to their great height, are apt to tilt, and do not enable the men to ride on them. On traversing some inundated ground the wagon stations readily passed through the water, whereas the cart stations had with considerable difficulty to be transported across a railway bridge.

Wireless telegraphy has thus proven itself a most trustworthy and useful means of communicating information in warfare, though in the present case any disturbances on the part of the enemy were excluded, for the Hereros were not provided with any similar apparatus. It should, however, be remembered that the difficulty arising from atmospheric influences is far greater in that part of Africa than either in Europe or America, while the country is absolutely devoid of any resources for repairing the apparatus.

A New Type of Shell.—The experience of the Russo-Japanese War has demonstrated that the really useful effect of field artillery projectiles, both as regards shrapnel and common shell, have been greatly exaggerated. The bullets of the former are neutralised by the slightest elevation of the ground, and its destructive power against masonry, field works, and obstacles is insignificant; shrapnel is only useful, as a matter of fact, against troops—standing up and in motion. Common shell is efficacious against material obstacles, but its small radius of action renders it but little destructive against the *personnel*, especially when lying down or sheltered, as, owing to the irregularity of their shape, its splinters do not retain their velocity. Finally, neither the one nor the other constitute a type of shell for all purposes, and the Japanese were obliged to use both sorts simultaneously against all kinds of objectives without obtaining satisfactory results.

This lesson was not lost sight of, and endeavours have been made in Germany, according to the *Kriegstechnische Zeitschrift*, to set up a new type of shell, combining, to a great extent at least, the properties of shrapnel and common shell. This shell is provided with a double-action fuse; it is, in short, a shrapnel with a bursting charge, thus combining a systematic dispersion of its splinters with destructive powers, and in addition a substance giving out a thick smoke is mixed with the explosive, which makes the observation very easy.

The shell consists of a steel casing, like the present shrapnel, containing segments whose systematic breaking is ensured by breaking lines cut in them. The explosive charge is placed almost in the middle of its length, and so disposed as to project a portion of the segments in front, and to laterally disperse the remainder. When bursting, the projectile gives out two cones of dispersion, the anterior one with an opening of 24°, and the lateral cone with one of 120°. The density of the segments is very great, especially in the centre of the cone, whilst the splinters of the casting contribute to increase the space of zone covered laterally.

According to the *Kriegstechnische Zeitschrift*, this new type of shell has been experimented with both in firing and in transport for long periods, and these experiments have demonstrated that it was absolutely safe to handle and kept well. It gave excellent results when using the

double-action fuse against artillery and against obstacles, whilst against infantry its effect was satisfactory. With regard to ranging, the smoky substance mixed with the charge greatly facilitated its practice. This projectile should be especially efficacious against the *personnel* placed behind an obstacle, because it does not burst until it has gone through the latter.

Recruiting Statistics for 1904.—The number of young men reaching the age for military service amounted to 487,335. By adding those put back from 1903 (314,615), from 1902 (250,936), and from previous classes (35,915), it will be seen that the total of the recruiting resources amounted to 1,088,801 men, who were classified as follows:—

	Men.
Unfit for service - - - - -	34,961
Not allowed to serve (convicts, etc.) - - - - -	1,092
Put back, emigrated, in excess - - - - -	603,478
Enrolled in the Territorial Army { Combatant (a) - - - - -	206,709
{ Non-combatant (b) - - - - -	3,842
Enrolled in the Navy - - - - -	8,411
Assigned to the Recruiting Reserve { Army - - - - -	87,853
{ Navy - - - - -	1,451
Attached to 1st Levy of Landsturm - - - - -	110,300
Entered as Volunteers in the Army (c) - - - - -	*29,042
" " " Navy - - - - -	*1,662
Total - - - - -	1,088,801

The number of young men who enlisted in the Army before reaching the military age amounted to 21,163.* By adding this last number to those mentioned under the figure (a), (b), and (c), a total contingent of 260,756 men will be arrived at, enlisted during 1904, and showing an increase of 3,947 men over the contingent for 1903.—*Bulletin de la Presse et de la Bibliographie Militaires, La France Militaire, and Scientific American.*

ITALY.—Manœuvres for 1906.—This year's manœuvres do not call for much remark. So-called Royal Manœuvres of 2 army corps, operating against one another, will not take place, either because the manœuvres planned on a large scale which took place in 1903 and 1905 (between which came the Army and Navy manœuvres at Naples) were adversely commented on by the greater portion of the Press as "soldiers' pic-nics," or because, from motives of economy, they can only be held every second year. At the same time, army corps, adjacent to one another in their districts, are permitted to arrange for one combined manœuvre between themselves, and, "should a favourable opportunity occur," even to organise scouting and reconnaissance by the cavalry beyond their own army corps borders. Special grants for these manœuvres, however, are not forthcoming. According to arrangements, only manœuvres inside army corps will take place, the plans for which (field firing, manœuvre camps, or field manœuvres) must depend on the sums granted to individual corps and the period for which the reserves are called out. The Reservists will be taken from the 1881 class. In addition, a 17

*In these numbers are included one-year Volunteers.

days' manœuvre camp for the mobile Militia will be held in the district of the Ist (Turin) Army Corps. A combined assembly on a war footing of the Landwehr with the troops of the first line will, therefore, not take place as in the last three years. Finally, only an 8 days' manœuvre for Alpine Troops in the IIIrd (Milan) Army Corps district, cavalry manœuvres in the Vth (Verona) Army Corps district, and a manœuvre camp of 4 cavalry regiments at Cupua are provided for.

Changes in the Condition of Non-commissioned Officers.—The Italian Government is about to introduce some radical changes in the legislation at present regulating the status of non-commissioned officers. At the present time the number of non-commissioned officers who have completed 12 years' service and who are candidates for civil employment, is such that it is impossible to gratify their wishes without making them wait for many years. Under such conditions the cadres are encumbered with men whose sole desire is to leave the Army, and whose zeal has, consequently, almost disappeared.

In order to remedy this state of affairs the Government proposes to grant non-commissioned officers such advantages in the Service itself, that, instead of seeking civil employment, they will prefer to remain with the colours until they are entitled to a pension (after 30 years' service), or until they have been promoted officers. To attain this object the Government intends to completely remodel the various non-commissioned ranks (with the exception of the Royal Carabiniers), and to create the rank of sergeant-major in each company, squadron, and battery, and to reserve for these sergeant-majors a quarter of the vacancies which occur in the rank of sub-lieutenant. These non-commissioned officers will be promoted to commissioned rank without having to undergo the examinations for admission into the Military Academies. The following is the scheme as laid down by the War Minister:—

Art. I.—The following is the classification of grades of non-commissioned officers:—

1. Sergeant, quartermaster-sergeant, pay-sergeant, lance-corporal of the Royal Carabiniers.
2. Corporals of the Royal Carabiniers.
3. Sergeant-major of company, squadron, or battery.
4. Sergeant-major of the Royal Carabiniers.

Art. II.—Nothing is changed with regard to non-commissioned officers of the Royal Carabiniers.

Art. III.—The rank of company-sergeant-major is given, one-third by selection and two-thirds by seniority, to sergeants who have the necessary qualifications for filling the post of first non-commissioned officer of the company, squadron, etc., and certain other employments which will be determined by the regulations.

In peace, no sergeant can be promoted company-sergeant-major who has not at least 5 years' service and 4 years in the rank of sergeant.

Cavalry trumpet-majors, fencing masters, and riding instructors fit for promotion will be promoted squadron-sergeant-majors when, in the corps to which they belong, a sergeant junior to them has been promoted to that rank. In any event they will be promoted to the rank of squadron-sergeant-major after 10 years' service.

Art. IV.—The following is the daily pay for each rank :—

Sergeant, quartermaster-sergeant, and pay-sergeant, 2·02 lire (1s. 7d.).

Ordinary sergeant, 3·00 lire (2s. 4d.).

First sergeant, 3·30 lire (2s. 6½d.).

Sergeant-major, 3·50 lire (2s. 9d.).

Art. V.—The special course, organised at the Military School at Modena for non-commissioned officers desirous of being promoted officers in the different arms, is abolished. A quarter of the vacancies occurring annually in the subaltern officers' cadres is reserved for company-sergeant-majors.

Art. VI.—The limit of age of 28 years, fixed by the present law for the nomination of non-commissioned officers to the rank of sub-lieutenant, is increased to 32 years. The conditions under which non-commissioned officers can be promoted officers are as follows :—

1. Have at least 8 years' service, of which 3 have been in the rank of company-sergeant-major.
2. To have been noted as "Very good" for 3 consecutive years, and to have successfully passed through a theoretical and practical course under conditions to be determined by regulation.
3. To have been passed, both from an intellectual and physical point of view, as fit for the rank of sub-lieutenant by the corps Board of Promotion. The opinion must be confirmed by the various higher authorities.
4. Proof that the married company-sergeant-majors have the minimum annual income laid down for officers (this amounts to 4,000 lire, or £120, including pay).

Art. VII.—Sub-lieutenants, who have been company-sergeant-majors, are promoted lieutenants after 4 years' service in the former rank. During peace time they can never reach the rank of captain. Trumpet-majors, fencing and riding masters can not be made officers.

Art. VIII.—Re-engagement with extra pay is abolished. In order to obtain civil employment it will no longer be necessary to have re-engaged with extra pay. Every 5 years non-commissioned officers will have their daily pay increased by 0·35 lire (3½d.).

Art. IX.—Retired non-commissioned officers, without being entitled to a pension, will receive a bounty of 500 lire (£20) if they have completed 6 years' service. The non-commissioned officer promoted to officer will receive a bounty of 500 lire in the mounted and 400 lire in the dismounted branches of the Service.

In his report the War Minister points out that the new law on the status of non-commissioned officers will involve no extra charge of the Budget; on the contrary, the Government will effect a slight economy. In spite of that, old non-commissioned officers will benefit, and the advantages accorded them will induce them to remain in the Army rather than seek civil employment.

On examination of this scheme a remarkable fact is made clear, viz. : that the present tendency in Italy with regard to non-commissioned officers is diametrically opposite to those existing in France. Whereas in the latter country the new law on recruiting obliges non-commissioned

officers to leave the Regular Service after 15 years, in order to take up civil employ, in Italy they endeavour to retain non-commissioned officers up to 30 years' service and to deprive them of civil employment.—*Militär Wochenblatt* and *La France Militaire*.

UNITED STATES.—A New Army Signalling Apparatus.—Signalling from station to station is not the easy matter it seems. In order that an object on shore used as a signal may be seen by the observer on a tug 9,000 yards away, there must be a strong contrast of colour between the signal form and its background, else the form cannot be distinguished from the background. First of all, then, this contrast of colour must be secured. How the obstacle may be overcome is pointed out by Captain Thomas E. Merrill, of the Artillery Corps, in an article published in the *Journal of the Military Service Institution*. Broadly speaking, his apparatus is constructed very much like a huge window-shutter, inasmuch as it depends for its effect on the simultaneous movement of a number of hinged boards.

Captain Merrill finds that the objects used to represent signals must be all either white or black, and their background of the opposite colour. The easiest background to provide is a dark one. A grass or earth slope, while of course not black, will generally answer the purpose. Then the signal forms must be white. A white surface in shadow shows dark at long distances. Therefore, in the general case it is necessary to use a surface whose face toward the observer is so inclined as to not be in shadow.

At Fort Heath a plane surface 15 by 40 feet, with a fall of 15 feet in the 40, has been found to work very well when not in shadow, and on account of its inclination, fairly well even when in shadow.

The plane surface consists of inch boards each a foot broad and fifteen feet long, extending across stringers that run parallel with the long direction, there being forty of these boards. Every fourth board from the top is hinged to the preceding board, and all the hinged boards are so arranged by a system of levers and counterweights that all can be simultaneously raised to a vertical position or lowered to a position where they form part of the plane surface.

The plane surface is painted white. The underside of the hinged boards and the stringers under the hinged boards are painted black. When the hinged boards are vertical the apparatus looks black from the front because each hinged board covers the preceding white boards to such an extent that they are invisible to an observer situated to the front and on a slightly lower plane.

The operation of the apparatus resembles that of the heliograph. Normally the white surface is in view. The observer on the tug watches the white surface. When the signal is to be sent the white surface disappears, due to the raising of the hinged boards. The apparatus has been found to work almost as rapidly as the heliograph and—an important advantage—is easily operated by one man.

The appearance presented to a distant observer when a message is being sent is as though a vertical square 15 feet on a side changed uniformly throughout its entire surface from black through all the intermediate shades to white, and *vice versa*. At a distance one does not see, as the square changes from black to white, a succession of bands

of white increasing in width until the entire surface is white, as one might as first thought expect, but just a uniform change in colour over the entire square. For artillery target practice a single letter would indicate a pre-arranged command.

The signal apparatus described was used with complete success for the entire sub-calibre and service practice of Forts Banks and Heath during the fall of 1905. During the service practice the range of the tug varied between 4,000 and 7,000 yards. The practice lasted from about 8.30 a.m. until about 4 p.m. the same day. It is safe to say that at least one hundred signals, each a single letter, were sent during the day. Not one was repeated, and not one was misunderstood. — *Scientific American*.

CORRESPONDENCE.

PEACE PREPARATIONS FOR OVER-SEA EXPEDITIONS.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—

Colonel Callwell's new book on "Military Operations and Maritime Preponderance" might well be treated as the text-book on the functions of our Army in our next great war. He has shown in it how the Army of a great maritime Power can, and should be, used to co-operate with the Navy. Whether our Army is or is not yet of a strength sufficient to undertake such expeditions against our powerful neighbours is beyond the scope of this paper; but, assuming that an over-sea expedition is a likely contingency in such a war, ought we not to make full preparations to meet it?

To be really helpful to naval strategy, military over-sea expeditions should be dependent as little as possible on naval aid for their execution. Naval escorts will be required for any fleet of transports, and many of the boats and steam pinnaces of these war-vessels will be available for aiding in the disembarkation, except when there is immediate danger of a naval attack. The possibility of such an attack must never be lost sight of, and hence it is all the more desirable that transports should not be too dependent on the assistance of the Royal Navy when landing.

The allotment of naval personnel "to transports" assumes a different aspect. It would obviously be unwise for the Admiralty to lock up in transports seamen who might be required as fighting-ships' crews at any moment. If, therefore, future military over-sea expeditions are to necessitate the employment in transports of any considerable number of seamen, it is most unlikely that such expeditions will be undertaken until the Navy has attained almost complete maritime ascendancy. This is contrary to the lessons of past wars exemplified in Colonel Callwell's book, which teach the principle that "early" co-operation between the two Services is very desirable.

There is an additional reason why the transports should be prepared to start soon after the commencement of hostilities. It seems quite possible that an Army in transports might be used at a bait for a hostile battle-fleet. It would be a great inducement to an enemy to bring his ships out of harbour, if there were a chance of finding transports at sea. It is quite likely that public opinion would force an admiral to risk battle, even

though his fleet were much inferior, as soon as it became known that a military expedition had started from our shores. Our Government would, no doubt, decide according to the circumstances of each case what superiority in naval forces would be required to justify the despatch of such an expedition. It war, risks must be run, and with a fair chance of success in sight the Army would doubtless be prepared to accept them.

The two main arguments urged against the employment of an over-sea expedition seem to be:—

1. The danger which would be incurred by a fleet handicapped by mothering a mob of transports.
2. The great risks which a mass of transports would run in moving over the high seas, if attacked by the enemy.

As regards (1), we have presupposed that our fleet is superior, and that it wishes to meet the enemy in battle. Does the handicap of the transports outweigh the advantage of the chance of bringing on an engagement? This is entirely a naval question.

As regards (2), the danger to transports appears to be entirely from torpedo vessels and submarines, as the protection of our fleet should suffice against attacks of larger vessels. At first sight it appears appalling to picture a crowd of transports attacked by some destroyer divisions in the dead of night; but is the risk as great as we imagine?

We may assume that torpedo craft will not be able to approach the transports in daylight. If we postulate that it would be wasteful to employ torpedo vessels to attack merchant-ships, it will be also true that they should usually confine their attention to the warships accompanying the transports rather than to the transports themselves; for, though the danger in attacking the former would be slightly greater, the possible destruction of a battle-ship would more than compensate the extra risk.

Perhaps the greatest objection to these expeditions is that, though a battle fleet at night has to depend on secrecy and mobility rather than on gunfire, the presence of a large number of transports unaccustomed to night manœuvring would prevent the attainment of secrecy, on which safety so much depends. Thus, the transports would not only render themselves liable to attack by night, but would also disclose the position of war-ships in the vicinity—a much more dangerous result.

If this risk is overwhelming, no over-sea expedition would seem to be possible, since one can hardly imagine any form of blockade which would ensure that no torpedo craft should leave the enemy's ports.

It might be found wise to train our troops to disembark at night, so that the dangerous part of the voyage, *i.e.*, the portion within 100 miles of the enemy's coasts, should be undertaken in daylight.

We may assume that our transports will be safe outside a radius of 300 miles of the enemy's bases or temporary base, since the defence of our ports is founded on this assumption. Moreover, the risk of meeting hostile torpedo vessels is not great until we approach within 150 miles, unless the enemy has very precise information of our objective; without such information the boats would have small chance of meeting the transports at a distance, and would probably be away when most required.

But it may be urged that the real danger only commences when the transports have reached their destination—when the enemy can locate their position and make detailed plans for their attack. If this objection is considered vital, over-sea expeditions will be possible only against very eccentric objectives, as no state of sea power is likely in which this form of attack can be avoided; but is this objection insuperable?

It may be granted that our battle fleet cannot remain near the hostile coast at night, but the enemy's fleet will be unlikely to attack at night if we have a superiority in destroyers; and thus again the only danger to our transports will be from torpedo vessels.

This danger is real enough, certainly, but in places where the rise and fall of tide is small there seems little reason why transports should not be anchored, so that, if torpedoed, they may merely ground. The whole question of over-sea expeditions resolves itself into whether we are or are not willing to lose a proportion of our transports; and as there is little reason why the loss of the ship need entail loss of life or stores on board, the game seems worth the candle. We must harden our hearts. Unless this is the principle underlying our strategy, the idea of a striking force would appear to be of little value. If it is so, we certainly need more practice of details before we are fit to undertake over-sea expeditions.

We see, then, that it is right that our Army should be ready to co-operate with the Navy soon after the declaration of war, and that for this purpose the Army must prepare to carry out certain duties, which have a naval aspect in peace, but which in war the Navy would be too busy to undertake. It may be assumed that naval transport officers will be forthcoming.

Among these duties which the Army might reasonably be expected to take over, the following are the most obvious :—

1. The performance of those ship duties which are not routine work for the ordinary merchant-ship's crew.
2. The stowage of baggage, animals, and wagons, so that they may be forthcoming in the order required on disembarkation with the minimum expenditure of time and labour.
3. Signalling at sea.
4. The launching, manning, and making fast of horse-boats, etc.
5. The slinging of horses, the handling of derricks and of donkey-engines (for it would be unwise to depend on the ordinary crew in these matters, as they may be unaccustomed to live-loads, and may object to the extra strenuous work which will be necessary as soon as disembarkation begins).
6. The construction of piers and landing places.
7. All beach duties.

The majority of these duties could be undertaken by troops with only a short preliminary training; others, such as working engines and making piers, would require more experience.

There is another class of specialists which merit attention: "Trained raiding parties."

It is usually assumed that the Navy would undertake all minor raids, and there are many advantages in such a course, *e.g.* :—

1. The Navy are themselves usually most concerned in such raids, and therefore know best what to aim at, and are least likely to do anything which may afterwards hamper naval strategy. As, however, we pre-suppose close co-operation between the two Services, this argument has no great weight.
2. The Navy are more likely to be on the spot when such raids are contemplated, and this is certainly important.
3. The raiding party, if carried in a war-ship, have some protection on the high seas, though a fast, nearly unarmed vessel, which did not attract attention, might be better for the object in view.

On the other hand, it may be pointed out that:—

1. As the greatest dangers occur after a landing has been effected, land forces with sea training seem more suitable than sea forces.
2. The objectives of attack must be studied on shore, and also the best way of carrying out the object, whether a demolition or a sudden assault be contemplated.
3. Special training—cliff climbing, for example—may be necessary, and needs practice on land.
4. At the time when such raids are being planned, the naval forces are likely to be comparatively more precious than their military *confrères*, and the latter are therefore more available for risky adventures.
5. As before mentioned, a vessel unsuited for purely naval work may be best for raid purposes.

The effect of such small raiding expeditions may be out of all proportion to the risks incurred. Recent experience has shown that important signal stations, docks, canals, and even the armament of coast-defence works, in which attack is expected, are often vulnerable when attacked by a daring, resourceful enemy.

A *personnel* with the highest pitch of training is required for such raids. The raiding party should be able to perform the following tasks:—

- a. *Naval*.—Handle a small boat in bad weather; pick up bearings and recognise landmarks in the dark or in a fog; land on a dangerous coast, if necessary, by swimming, and be able to take explosives, etc., with them when they do so.
- b. *Military*.—Climb up difficult cliffs; find their way in the dark, moving noiselessly; scale obstacles—walls, iron palings, etc.; recognise readily the vulnerable portions of the object of attack; carry out hasty demolitions. . . .

The ideal man in such a party would be North Sea pilot, Channel swimmer, mountain guide, crack burglar, trained gunner, and expert sapper, all in one! Some peace training appears desirable!

It would be useful if he were also a trained scout and accustomed to reconnoitre landing places and the country immediately inland. The last war has shown that awkward landing places are often the best, and has proved the great utility of small reconnoitring parties, who land at night.

Although in a great European war, circumstances are likely to be different in many respects, we must conclude that for a bold general the number of points open to attacks from the sea is much larger than we had formerly considered to be the case. The effect will be to give an increased importance to raids, since an enemy cannot now afford to disregard a landing on his coasts, simply because the point of disembarkation does not appear to offer great facilities for a landing in force. Should he pay no attention to such a raid, he might find that he has allowed an advanced party of the enemy to secure a position without opposition, which will cover a large disembarkation behind. Hence a practised raiding force would be useful in making feints which will add to the chances of success in over-sea expeditions, and also in making a preliminary landing to seize a covering position, which is so important a matter when landing on hostile coasts.

The following is a mere outline of the scheme of preparation suggested:

A vessel of suitable size should be bought and a permanent staff, including a navigating officer, should be appointed. This vessel should be

of the usual transport type, but will require neither powerful engines nor elaborate fittings other than those already in stock for transports. Its purchase would not be expensive. The great thing is to have a headquarters, at which the results of experiments can be collated and general principles laid down.

To this vessel units should be sent in turn to undergo a course of instruction (if possible from all arms simultaneously). Disembarkations should be made all round our coasts; but in winter it might be necessary to use sheltered bays.

If the permanent staff arranged skeleton schemes for large disembarkations, of which the actual landing formed merely a part, and if the restrictions entailed in handling a large force were strictly enforced, the Army would certainly gain invaluable war experience, which would prove a relief to the Royal Navy. Probably at least a division could be trained in one year.

There are certain specialists who require longer training. Selected men from every unit to be trained during the year might undergo a two months' preliminary course in certain special duties.

The training of raiding parties deserves minute attention. It would appear only possible to teach men these arduous duties if their whole time be devoted to them. A new unit should therefore be formed, a *corps d'élites*, in which officers and men would require most careful selection. This unit should be attached to the transport-ship, though often acting independently of it.

Practice in minor raids would show up many vulnerable points on our coasts. Such raids might afford most useful experience to our coast-defence troops, if the exercises were not restricted too much in time and space.

A large establishment would not be required for such a unit.

Not only should the actual technical work of such raids be learnt, but a study of foreign objectives should be made. For this purpose there must be free communication with the Naval and Military Intelligence Departments. Arrangements should be made that one officer at a time may be away from the unit to examine actual objectives abroad. Each officer in the unit would be responsible, under the Intelligence branch, for a particular foreign coast area. In time most valuable and complete information could be compiled.

Actual practice in a foreign country, except to a limited degree, by the single individual, would be impossible; but it would usually be easy to find places on our coasts where somewhat similar conditions existed. In such a case the foreign objective would always be kept in view during practice raids.

The moral effect which could be produced in war by such a unit might exceed the actual results attained.

It is easy to be wise after an event, but we now know that had the Japanese landed raiding parties on the night of the first attack on Port Arthur, the ordnance of several shore batteries could have been destroyed. The siege, and the heavy loss of life entailed, might even have been rendered unnecessary.

WILFRID B. SPENDER,
Captain, R.G.A.

NAVAL AND MILITARY CALENDAR.

MAY, 1906.

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- 1st (T.) H.M.S. "Katoomba" paid off at Portsmouth.
 - 4th (F.) The British Government sent an Ultimatum to the Sultan of Turkey ordering the withdrawal of Turkish troops from Egyptian territory in 10 days' time.
 - 5th (Sat.) 200 rebel Zulus attacked a British Column in Natal, but were defeated with considerable loss.
 - 7th (M.) H.M.S. "Bonaventure" paid off at Devonport.
 - " " H.M.S. "Albion" paid off at Chatham.
 - " " H.M.S. "Queen" paid off at Portsmouth.
 - 8th (T.) H.M.S. "Queen" re-commissioned for further service in the Mediterranean.
 - " " Launch of first-class Armoured Cruiser "Admiral Makharoff," from the La Seyne Yard, Toulon, for Russian Navy.
 - " " 4th Bn. Worcestershire Regiment left Malta for Egypt in the "Dilwara."
 - 11th (F.) H.M.S. "Queen" left Portsmouth for the Mediterranean.
 - " " 4th Bn. Worcestershire Regiment arrived in Egypt from Malta in the "Dilwara."
 - 12th (Sat.) The Sultan of Turkey yielded to the demands contained in the British Ultimatum.
 - 13th (Sun.) Launch of first-class Battle-ship "Ioann Zlatoust" from Imperial Dockyard, Sebastopol, for Russian Navy.
 - " " 6th (Inniskilling) Dragoons left Ireland for Egypt in the "Cestrian."
 - 14th (M.) H.M.S. "Edgar" paid off at Chatham.
 - " " H.M.S. "Sutlej" paid off at Chatham.
 - " " H.M.S. "Royal Arthur" paid off at Portsmouth.
 - " " H.M.S. "Latona" paid off at Portsmouth.
 - " " "U" Battery R. H. A. left England for Egypt in the "Cestrian."
 - 15th (T.) H.M.S. "Hogue" commissioned at Devonport for 4th Cruiser Squadron.
 - " " H.M.S. "St. George" paid off at Devonport.
 - " " H.M.S. "Sutlej" commissioned at Chatham for 4th Cruiser Squadron.
 - " " H.M.S. "Euryalus" commissioned at Portsmouth for 4th Cruiser Squadron.
 - 17th (Th.) H.M.S. "Prince of Wales" arrived at Spithead from Mediterranean.
 - " " H.M.S. "Venus" arrived at Portsmouth from Mediterranean.
 - 18th (F.) Loss of Torpedo Boat No. 56 off Damietta by capsizing at 1.30 a.m. in a gale, seven Petty Officers and Men being drowned.
 - 19th (Sat.) Sharp fighting took place in Natal near Cetewayo's grave.
 - 23rd (W.) 6th (Inniskilling Dragoons } arrived in Egypt from Ireland and
"U" Battery R. H. A. } England in the "Cestrian."
 - 29th (T.) H.M.S. "Prince of Wales" paid off at Portsmouth.
 - " " H.M.S. "Venus" paid off at Portsmouth.
 - " " Launch of first-class Battle-ship "Schlesien" from Schichau Yard, at Danzig, for German Navy.
 - 30th (W.) H.M.S. "Prince of Wales" re-commissioned at Portsmouth for further service in the Mediterranean.

- 30th (W.) H.M.S. "Venus" re-commissioned at Portsmouth for further service in the Mediterranean.
- " " Stranding of first-class Battle-ship "Montagu," of Channel Fleet, at 2.10 a.m., on the Shutter, Lundy Island, in dense fog.
- 31st (Th.) The Marriage of H.M. the King of Spain with H.R.H. Princess Ena of Battenberg was solemnized in the Church of San Geronimo Madrid. On returning from the Church a bomb was thrown at the Royal Carriage. T.M. the King and Queen of Spain escaped without injury, but about 160 persons were killed and wounded.

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NOTICES OF BOOKS.

War with Disease. By FREDK. F. MACCABE, M.B. Dublin: Dollard, Ltd., 1906.

It is a good sign of the increased attention now paid on every side to the maintenance and increase of the efficiency of our small Army, when we find officers of all ranks striving to teach themselves and to instruct those under them in the principles of sanitation and a more thorough knowledge of hygiene. In Ireland especially does the matter appear to have been taken up with great thoroughness; several lectures have been recently there delivered on this terribly important subject, and among them the four addresses given to the officers and men of the 3rd Cavalry Brigade on the matter of "Preventive Medicine" deserve the attention of all regimental and medical officers. Dr. MacCabe enlisted the attention of his audience from the very outset by assuring his hearers that "preventive measures, to be effectual, must be simple and guided by common-sense," and showed them how much they might effect by precept and explanation, and what a very great deal their men might do themselves to reduce the enormous wastage from preventible disease for which our Army has always been so unfortunately notorious. Most men are beginning to combat the idle theory, responsible for so large an amount of sickness and death, that "you cannot get soldiers to take precautions"; surely our men have no less self-restraint than have Orientals, and if the Japanese soldiers could reduce their wastage from preventible disease to a minimum, by the respect which they evinced for sanitary rules, there can be no

reason why in such matters we should fall one whit behind our allies. There is no doubt that the Army has done and is doing, in its small, slow way, much good work to the nation in inducing, among the class from which our soldiers are drawn, a knowledge of hygiene, a love of personal cleanliness, and a respect and liking for fresh air and exercise; but both the nation and the Army have yet very much to learn. It is necessary, too, that our medical officers, freed from the care of sickness, should, as sanitary officers, devote practically the whole of their attention to the prevention of disease. In the meantime, regimental officers can do very much, and in this admirable series of lectures by Dr. MacCabe they have—put before them in a most convincing manner and in plain, straightforward language—that which they can not only understand themselves, but can, with advantage and without difficulty, pass on to the men of their squadrons and companies.

PRINCIPAL ADDITIONS TO LIBRARY, MAY, 1906.

The Hearseys: Five Generations of an Anglo-Indian Family. By Colonel H. PEARSE. 8vo. (Presented.) (William Blackwood & Sons.) London, 1905.

Cromwell: The Campaigns of Edge Hill, Marston Moor, Naseby, and of 1648 in the North of England. By Captain P. A. CHARRIER. Imp. 8vo. 6s. (Presented.) (Relf Brothers, Ltd.) London, 1906.

The Nearest Guard: A History of Her Majesty's Body-Guard of the Honourable Corps of Gentlemen-at-Arms, from their Institution in 1509 to the Year 1892. By Major H. BRACKENBURY. Demy 4to. (Presented.) (Harrison & Sons.) London, 1902.

Aids to Scouting for Non-commissioned Officers and Men. By Major-General R. S. S. BADEN-POWELL. Demy 12mo. 1s. (Presented.) (Gale & Polden.) Aldershot, 1906.

Map Reading and the Elements of Field Sketching. By Colonel WILLOUGHBY VERNER. 4th Edition. Crown 8vo. 2s. 6d. (Presented.) (John Bale, Sons, & Danielsson, Ltd.) London, 1906.

Bellum Civile: Hopton's Narrative of his Campaign in the West, 1642-1644, and other Papers. By Lord HORTON. Edited by C. E. H. C. HEALEY, Somerset Record Society. Vol. XVIII. 8vo. 12s. 6d. n.p., 1902.

A Narrative of the First Burmese War, 1824-26. By G. W. DERHÉ-PHILIPPE. 8vo. 3s. 6d. (Presented.) (Government Printing Press, India.) Calcutta, 1905.

Notes on Military Sanitation. By Lieut.-Colonel H. P. G. ELKINGTON, R.A.M.C. Demy 12mo. 1s. (Presented.) (St. John Ambulance Association.) London, 1906.

Fontenoy and Great Britain's Share in the War of the Austrian Succession, 1741-48. By F. H. SKRINE. 8vo. 21s. (William Blackwood & Sons.) Edinburgh and London, 1906.

The King's Regulations and Admiralty Instructions for 1906. With Addenda. 8vo. 5s. (Presented.) (Eyre & Spottiswoode.) London, 1906.

Handbook of the 6-pounder Nordenfolt Q.F. Gun (Land Service), 1906. 8vo. 9d. (Presented.) (Harrison & Sons.) London, 1906.

Instructions Concerning the Duties of Light Infantry in the Field. By General Jarry. Demy 12mo. (Presented.) (Cox, Son, & Baylis.) London, 1803.

Militarie Discipline of the Young Artillery-man. By Colonel W. BARRIFFE. 6th Edition. Small 4to. (Presented.) (Gertrude Dawson.) London, 1661.

A Series of Figures Showing all the Motions of the Manual and Platoon Exercises. By Major T. L. MITCHELL. 8vo. (Presented.) (William Clowes.) London, 1830.

Royal Warrant for Pay, Appointment, Promotion, and Non-effective Pay of the Army, 1906. 8vo. 1s. (Presented.) (Harrison & Sons.) London, 1906.

Brief Digest of the Services of the Buffs (East Kent Regiment). Compiled by Captain H. R. KNIGHT for the occasion of the Presentation of Colours to the 1st Battalion by the Right Hon. the Lord Mayor of the City of London. 8vo. (Presented.) (Gale & Polden, Ltd.) London, 1906.

3rd Cavalry Brigade Training, 1905. F'cap folio. (Presented.) (Cahill & Co.) Dublin, 1906.

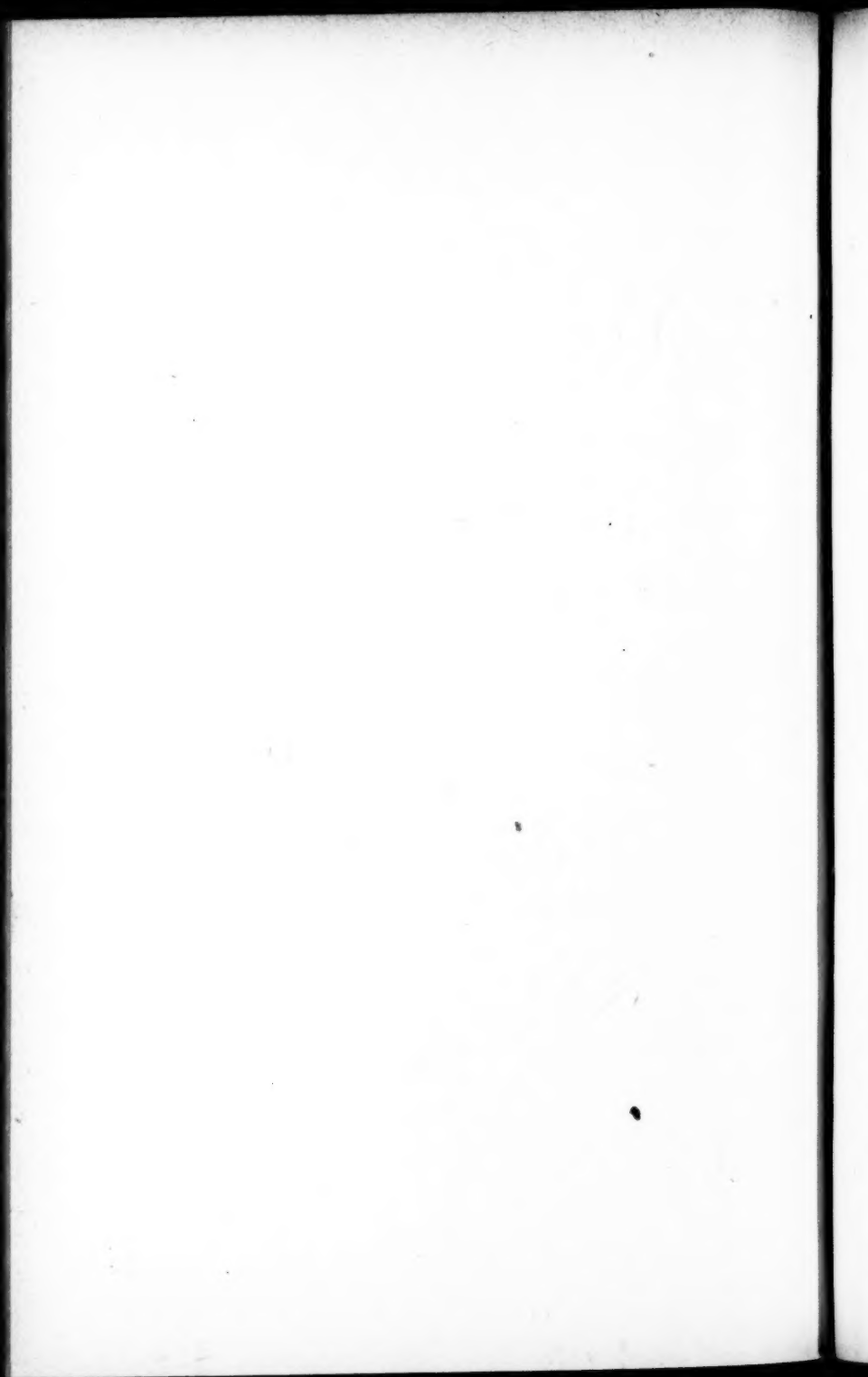
Heresies of Sea Power. By F. T. JANE. 8vo. 12s. 6d. (Presented.) (Longmans, Green, & Co.) London, 1906.

The Journal
OF THE
Royal United Service Institution.

VOL. XLIX. 1905-1906.

APPENDIX.

THE SEVENTY-FIFTH
ANNIVERSARY MEETING
MARCH 6th, 1906.



Royal United Service Institution.

REPORT OF PROCEEDINGS AT THE 75TH ANNIVERSARY
MEETING HELD ON TUESDAY, MARCH 6TH, FIELD-
MARSHAL THE RIGHT HONBLE. THE EARL ROBERTS,
V.C., K.G., K.P., G.C.B., O.M., G.C.S.I., G.C.I.E.
(CHAIRMAN OF THE COUNCIL), PRESIDING.

The CHAIRMAN: Gentlemen, the Secretary will read the notice convening the meeting.

The SECRETARY read the notice.

"The Council have the honour to submit their Report for the year 1905.

COUNCIL.

The Council regret to record the deaths of General Lord Chelmsford, G.C.B., G.C.V.O., and Major-General M. Protheroe, C.B., C.S.I.: Field-Marshal Earl Roberts, **V.C.**, K.G., was appointed a Vice-President, vice Lord Chelmsford, and Major-General H. D. Hutchinson, C.S.I., Director of Staff Duties, filled the vacancy on the Council caused by the death of Major-General Protheroe.

MEMBERS.

285 officers joined the Institution during the year; of this number 244 became Annual Members and 41 Life Members. 229 names were removed from the List, 104 owing to deaths, 97 on account of withdrawals, and 28 through non-payment of subscriptions. The Council, with regret, wish to again draw attention to the large number of officers resigning; though the total of resignations is less than that of last year, they still consider the number unsatisfactory. The total number of Members at the end of the year was 5,369, showing an increase of 56 on the number recorded at the end of December, 1904.

Most of the officers who have joined the Institution during the year have come from the Regular Army.

FINANCE.

The year's working has resulted in a credit balance of £803 18s. This is the largest on record for many years, and has been due, as will be seen from the accounts, to an excess of income and a diminution in most of the expenditures. The income of the year has amounted to £7,756, being an increase of £1,048 over 1904. The Balance of the Revenue Account comprises a sum of £611 received as Life Subscriptions; this amount, together with the Surplus Revenue of £192 18s., has been carried to Capital.

MUSEUM.

During the year many valuable additions have been made to the Museum, which was visited by Her Majesty the Queen, many Members of the Royal Family, and over 32,000 of the public. Many schools visited the Nelson Exhibition, and were admitted at a reduced rate, while a large number of the poorer schools were granted free admission. Many hundreds of Bluejackets and Soldiers also availed themselves of the privilege of free admission. The Council desire to express their sense of the great service rendered by Lieut.-Colonel Leetham, the Secretary of the Institution, in securing the success of the Nelson Exhibition.

The Council wish to convey to the Lords Commissioners of the Admiralty and to the contributors to the Loan Collection of the Nelson Exhibition their best thanks for their valuable support.

THE JOURNAL.

The JOURNAL has fully maintained its high position as a Service periodical.

Papers on the following subjects were read and discussed, and the majority have appeared in the JOURNAL. To the authors are due the best thanks of the Institution.

Colonel Sir Howard Vincent, K.C.M.G., C.B., A.D.C., V.D., M.P., Queen's Westminster Volunteers, "The United States Army."

Brevet Colonel G. H. Ovens, C.B., h.p., late Commanding 1st Battalion the Border Regiment, "Fighting in Enclosed Country, with some Notes from the Essex Manœuvres."

Colonel A. M. Murray, R.A., late Assistant-Commandant, Royal Military Academy, "Comparison Between Continental and English Methods of Military Education."

Lieut.-Colonel H. A. Iggulden, the Sherwood Foresters, late Chief Staff Officer Tibet Mission Force, "To Lhasa with the Tibet Expedition, 1903-04."

Colonel Lord Raglan, Commanding Royal Monmouthshire Royal Engineers (Militia), "The Militia in 1905."

Commander the Lord Ellenborough, R.N. (Retired), "The Possibility of Our Fleets and Harbours being Surprised."

Major the Hon. T. F. Fremantle, 1st Bucks V.R.C., "Modern Military Rifles."

Colonel the Right Hon. Sir J. H. A. Macdonald (Lord Kingsburgh), K.C.B., "The Volunteers in 1905."

Lieutenant H. W. H. Helby, R.N., "Some Observations on Sounding, and the Admiralty Charts."

Captain E. D. Swinton, D.S.O., R.E., "The Comfort of Troops on Active Service."

Colonel H. Le Roy-Lewis, D.S.O., Hampshire Carabiniers, Imperial Yeomanry, "The Imperial Yeomanry in 1905."

Lieut.-Colonel H. De la P. Gough, p.s.c., 16th (The Queen's) Lancers, "The Strategical Employment of Cavalry."

Lieutenant H. T. A. Bosanquet, R.N. (Retired), "A Training Service for the Mercantile Marine."

Douglas Owen, Esq., Barrister-at-Law, Inner Temple, "Capture at Sea: Modern Conditions and the Ancient Prize Laws."

- George F. Shee, Esq., M.A.*, "The True Cost of the Voluntary System for Every Branch of Our Military Forces."
- General Sir Richard Harrison, G.C.B., C.M.G.*, *Colonel Commandant Royal Engineers*, "Thoughts on the Organisation of the British Army."
- A. Curtis, Esq., Special War Correspondent of the Chicago "Daily News,"* "The Siege of Port Arthur from a Naval Aspect."
- Major R. A. Johnson, 1st V.B. Hampshire Regiment*, "Military Cyclists and the Home Army."
- Lieut.-Colonel G. M. Heath, D.S.O., R.E.*, "Field Engineering in the Light of Modern Warfare."
- H. E. Leigh Canney, Esq., M.D., M.R.C.S.*, "The Toleration of Enteric Fever by the Army."
- Captain H. H. Paynter, Motor Volunteer Corps (late R.N.)*, "The Use of the Motor Car in Warfare."
- T. Miller Maguire, Esq., M.A., LL.D., Inner Temple, Barrister-at-Law*, "The Development of International Strategy since 1871, and its Present Conditions."

The thanks of the Institution are also due to the following officers for Occasional Papers and Translations from Foreign Journals contributed by them: *Occasional Papers* by G. T. Bennett, Emmanuel College, Cambridge; Colonel C. E. de la Poer Beresford, *p.s.c.*, late Military Attaché, H.M. Embassy, St. Petersburg; Brevet Major W. D. Bird, D.S.O., *p.s.c.*, A.A.G., Indian Staff College; Colonel H. Blundell, C.B. (late Grenadier Guards), M.P. for the Ince Division of Lancashire; Colonel Alexander Burton-Brown, late R.A.; Major J. E. Edmonds, R.E., D.A.Q.M.G.; Major W. Kirkpatrick, D.S.O., late Indian Army; Major F. Cunliffe Owen, R.F.A.; Colonel R. N. R. Reade, *p.s.c., h.p.*, King's Shropshire Light Infantry, and Commandant of the R.M.C. of Canada; Field-Marshal the Right Hon. the Earl Roberts, V.C., K.G., K.P., G.C.B., O.M., etc.; Lieutenant P. O. G. Osborne, R.E.; Lieutenant H. J. Wallis, XX Deccan Horse; Colonel H. A. Walsh, C.B., late Commanding XXth Regimental District; Major B. R. Ward, R.E.; and one anonymous contributor. *Translations from Foreign Works*: Fleet-Surgeon C. Marsh Beadnell, R.N.; Captain W. H. Bingham, 69th Punjabis; Major P. H. du P. Casgrain, R.E.; Major J. L. J. Clarke, East Yorkshire Regiment, D.A.A.G. IIIrd Army Corps; The General Staff; Lieut.-Colonel E. Gunter, *p.s.c.*, (late) East Lancashire Regiment; Lieut.-Colonel the Hon. E. Noel, late Rifle Brigade; and three anonymous contributors.

LIBRARY.

The number of books added to the Library was 215, bringing the total number of volumes in the Library up to 28,851.

The number of Members subscribing to the Lending Library has increased from 160 to 172, which may be considered satisfactory.

Donations of books and maps have been received from the Governments of Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Russia, Spain, Sweden, Switzerland, and the United States. The thanks of the Council have been conveyed to the several Governments for these donations.

The Institution is indebted to the Lords Commissioners of the Admiralty, to the Army Council, the Secretaries of State for the Colonies, and for India, and to the Civil Service Commissioners, for

copies of various works issued by their respective Departments, and to the Speaker of the House of Commons for Parliamentary papers.

The exchange of Journals with Foreign Governments, and with many Scientific Societies in this and other countries, has been continued.

RECEPTION.

On 29th June the Council held a Reception in honour of His Royal Highness the President, who was present, together with Her Royal Highness the Duchess of Connaught and Her Royal Highness Princess Patricia of Connaught. Over 1,200 Members and their friends attended; and, as will be seen from the Accounts, no expense in connection with it was imposed on the funds of the Institution.

'ROYAL UNITED SERVICE INSTITUTION GOLD MEDAL AND TRENCH GASCOIGNE PRIZES.'

The subject of the Essay for the Gold Medal and Trench Gascoigne Prizes is:—

'In the event of war with one or more Naval Powers, how should the Regular Forces be assisted by the Auxiliary Forces and the people of the Kingdom?'

Major-General Sir G. H. Marshall, K.C.B., Major-General Sir T. Fraser, K.C.B., C.M.G., and Lieut.-Colonel C. E. H. Hobhouse, M.P., undertook the duties of Referees, and their decision will be made known at the Anniversary Meeting.

SPECIAL MILITARY ESSAY, 1905.

The subject of this Essay is:—

'The best, least irksome, and least costly method of securing the Male Able-bodied Youth of this country for service in the Regular or Auxiliary Forces as existing, and for Expanding those Forces in Time of War.'

The Council hope to be able to announce the result of this competition, together with the names of the Referees, at the Anniversary Meeting; but the work of judging the large numbers of Essays submitted has been very considerable.

MEMBERS OF COUNCIL.

The following Members retire from the Council, having served three years or proceeded on foreign service:—

Royal Navy.

Captain G. A. BALLARD, R.N.

Royal Naval Reserve.

Commander W. F. CABORNE, C.B., R.N.R.

Regular Army.

Brigadier-General C. G. DONALD, C.B.

Colonel L. A. HALE.

Major-General G. U. PRIOR.

Militia.

Colonel W. A. HILL, C.B.

Yeomanry.

Colonel Sir W. A. BAILLIE-HAMILTON, K.C.M.G., C.B.

Volunteers.

Colonel T. S. CAVE.

Sir G. H. CHUBB, Bart.

The following are the names of the Candidates nominated for the vacancies on the Council:—

Naval (1 Vacancy).

Captain Honble. A. E. BETHELL, C.M.G., R.N. (Assistant Director of Naval Ordnance).

Vice-Admiral Sir R. N. CUSTANCE, K.C.M.G., C.V.O.

Royal Naval Reserve (1 vacancy).

Commander W. F. CABORNE, C.B., R.N.R. (for re-election).

Regular Army (3 Vacancies).

Colonel Honble. J. T. ST. AUBYN, C.V.O., Commanding Grenadier Guards.

Brigadier-General C. G. DONALD, C.B. (for re-election).

Colonel L. A. HALE (for re-election).

Colonel Honble. O. V. G. A. LUMLEY, late Commanding 11th Hussars, h.p.

Major-General G. U. PRIOR, *p.s.c.* (for re-election).

Colonel F. W. ROMILLY, C.B., D.S.O., *p.s.c.*, Commanding Scots Guards.

Militia (1 vacancy).

Colonel the Viscount HARDINGE, Commanding 7th Battalion The Rifle Brigade.

Colonel W. A. HILL, C.B. (for re-election).

Yeomanry (1 vacancy).

Colonel R. B. COLVIN, C.B., Commanding Essex Imperial Yeomanry.

Major W. B. STEWART, Lothians and Berwickshire Imperial Yeomanry.

Volunteers (2 vacancies).

Colonel E. H. BAILEY, V.D., Commanding 1st V.B. East Surrey Regiment.

Colonel T. S. CAVE, V.D., Commanding 1st V.B. The Hampshire Regiment (for re-election).

Sir G. H. CHUBB, Bart., late Captain, 4th V.B. East Surrey Regiment (for re-election).

Colonel W. C. HORSLEY, V.D., Commanding 20th Middlesex V.R.C. (Artists).

Colonel Sir H. ROBERTS, Bart., V.D., Commanding 16th Middlesex V.R.C. (London Irish).

Colonel G. RUMSEY, Commanding 4th V.B. The Queen's Royal West Surrey Regiment.

A. LEETHAM, Lieut.-Colonel,

Secretary.

Whitehall,

January 25th, 1906."

CHESNEY MEMORIAL MEDAL FUND.

DR.	31st DECEMBER, 1905.		CR.
	1905.	1905.	
Jan. 1.	To Balance, 31st December, 1904	£ s. d. 43 14 8	£ s. d. 51 7 8
June 5.	" 6 mths. Div. £230, Bengal & North-Western Ry. Pref. Stock	3 16 6	
Dec.	" " " " " "	3 16 6	
		<u>£51 7 8</u>	<u>£51 7 8</u>

We hereby certify the above Account to be correct,

17th January, 1906.

WILDE AND FERGUSON DAVIE, Chartered Accountants,
Auditors.

TRENCH GASCOIGNE PRIZE FUND.

DR.	31st DECEMBER, 1905.		CR.
	1905.	1905.	
Dec. 31.	To Balance, 31st December, 1904	£ s. d. 35 3 9	£ s. d. 31 10 0
May 15.	" 6 mths. Div., £1,862 19s., North Brit. Ry. Deb. Stock	26 11 0	31 10 0
Nov. 13.	" " " " " "	26 11 0	25 5 9
		<u>£88 5 9</u>	<u>£88 5 9</u>

We hereby certify the above Account to be correct,

17th January, 1906.

WILDE AND FERGUSON DAVIE, Chartered Accountants,
Auditors.

NUMBER OF MEMBERS.

Members on 1st January, 1905	..	..	..	1935	3378	5313
„ joined during 1905	..	..	..	41	244	285
				<hr/> 1976	<hr/> 3622	<hr/> 5598
			Life. Annual.			
Deduct—Deaths during 1905	..	39	65	39	190	229
Withdrawals	..	..	97			
Struck off	..	..	28			
		<hr/> 39	<hr/> 190			
Number on 1st January, 1906	..	..	..	1937	3432	5369

TABULAR ANALYSIS OF THE STATE OF THE INSTITUTION.

[A full analysis for each year from 1831 will be found in the Report for 1897.]

Year. 1st Jan. to 31st Dec.	Annual Subs. received.	En- trance Fees.	Receipts (from all sources).	Life Subs. re- ceived.	Amount of Stock.	Invested in the pur- chase of Books, &c.	No. of Vol. in Library.	No. of Members on the 31st Dec.
	£	£	£	£	£	£		
1831	654	..	654	1,194	..	..	..	1,437
1841	1,450	..	1,643	186	6,000	243	5,850	4,243
1851	1,136	131	1,292	66	666	34	10,150	3,188
1861	2,122	305	2,899	266	2,846	99	11,812	3,689
1871	2,455	237	3,677	538	7,748	202	15,501	3,922
1881	2,893	238	4,967	645	13,670	240	19,920	4,577
1891	2,640	189	5,004	454	21,942	153	23,845	4,204
1892	2,930	605	9,429	1,572	24,805	142	24,099	4,657
1893	2,929	468	8,334	1,095	22,172	157	24,471	4,961
1894	3,598	215	6,625	606	12,840	200	24,680	5,016
1895	3,760	353	7,117	921	8,761	204	25,947	5,198
1896	3,802	351	7,225	876	8,761	245	26,161	5,347
1897	3,910	401	10,902†	959	12,386	381	26,381	5,550
1898	3,964	265	6,935	493	12,386	376	26,592	5,620
1899	3,834	167	6,646	251	12,841	430	27,142	5,583
1900	3,879	174	7,170*	235	13,791	264	27,492	5,491
1901	3,816	197	6,955	358	14,192	289	27,792	5,443
1902	3,806	188	7,063	449	14,491	309	28,167	5,427
1903	3,743	178	6,597	409	15,459	299	28,387	5,361
1904	3,684	184	6,707	448	15,459	301	28,636	5,313
1905	3,713	253	7,756	611	15,459	324	28,851	5,369

† A donation of stock valued at £2,323, and £1,301 realised by the letting of seats to view Her Majesty's Diamond Jubilee Procession, are included in this amount.

* This amount includes a donation of £500.

The CHAIRMAN: Gentlemen, I will ask you to consider that the Report and Accounts, as circulated, be taken as read, and adopted. I should like to say, myself, that this will be the last time I shall be in the Chair as Chairman of the Council of this Institution. I am glad to be able to say that I believe the Institution to be in a most satisfactory condition. You will be able to judge from the Report how matters stand. Throughout this year there have been great attractions in the Museum. The Centenary of Nelson, of course, assisted very much to add to them. I would like to express my thanks to the Secretary and to the Assistant Secretary for the great trouble they took throughout that time. (Hear, hear.) In fact I may say it was really owing to them that everything was done in so satisfactory a manner. I attended here myself very often, and met people who all expressed their great delight at the very systematic way in which the various decorations and mementoes of the great Admiral were laid out. Speaking generally, those I have seen who have been in the Hall have told me how delighted they were when they came here and how sorry they were that they did not know that such an Institution existed; that they would tell all their friends that it was one of the best places in London to come to visit. I must also express my great thanks to the members of the Council who have assisted me materially at our meetings. It is very pleasant to me to be in this position, and I owe it to them that everything has passed off in so satisfactory and pleasant a manner.

Major-General Sir G. H. MARSHALL, K.C.B.: I beg to second his lordship's proposal, and in doing so I would invite your attention to p. 8 of the Report, where you will find, I think, that the financial condition of the Institution is very satisfactory. We have a balance this year of over £803, as compared with a deficit last year of £100. I would point out that the whole of that is not due, as some might naturally think, to the proceeds of the Nelson Exhibition; but a great deal of it is of a permanent nature. There are several items in the Report, but I will not go through them; however, I would call your attention to the fact that in the matter of taxes we have made a saving of £80 this year, which will be permanent. I therefore think that we are justified in hoping that the financial condition of the Institution will continue satisfactory in the future.

Colonel LONSDALE HALE: Gentlemen, It is my duty on this occasion to make a few remarks. I will detain you as short a time as possible, but this is the only means the Council have of communicating with the 4,500 members who never come near the Institution. With regard to those gentlemen, there was a proposal mentioned at the last Annual Meeting, asking us to extend the Lending Library to the units of the Army. The Lending Library is now only available for individual members. The subject was gone into, not only by the Library Committee, but by independent people, and we have come to the conclusion that it is impossible to extend to other than individual members of the Institution the use of the Lending Library. We have gone into this matter most thoroughly, and it is impossible. The next point was that we offered to be of assistance to anybody, or any units, in obtaining books and so forth, and I am glad to say that at least a dozen regiments and individuals have applied to the Secretary for assistance, and that assistance has been given in select-

ing books, packing them, and sending them out, and no doubt that will be a very important function of the Institution in the future.

As regards the Lending Library, it is not only my opinion, but the opinion of all the Committee, that there is a very great future before it. We are aware that the Government has given £18 to every unit in aid of the Library, and £3 towards the upkeep. Those of us who know library work know what a little way £3 goes for the upkeep of a library, and I think that in course of time this Institution will become the great Military Lending Library of the Army and Navy. In order to do that, of course, it is very desirable that members should not be kept waiting for books. I am not going so far as a certain well-known journal has done in establishing a Book Club, saying that you can always have a book if you want it, but at the same time, I have gone carefully into the financial aspects of the matter with Captain Garbett, and we have found there was a waiting list. It is most essential that there should not be a waiting list for officers who should have to write to us again and again with regard to these matters, and we therefore came to the conclusion that we could, by an expenditure of a few pounds, wipe off the whole of the waiting list. At the present time there is not a single member of the Institution waiting for any book he requires, and we hope to be able to keep that satisfactory state of things up. If a member writes for a book like "The Life of Lord Randolph Churchill," of course we do not keep such books, and he will have to wait for that; but if we do that to help the members of the Lending Library, we must ask them to play fair in return; we must ask them not to lend books to officers who do not belong to the Institution or to the Lending Library. An officer of a high degree had the audacity to tell me, of all people in the world, the other day that he had borrowed books from the Library to lend to some of his young fellows, and before I could speak my mind to him, he told me, as a conclusion of the story, that the young fellows had lost the books, and that he had to scour all over England to replace them, and to replace them at his own cost. Well, if you lend books to people who have no right to them, and they become lost for some reason or other, then of course it is only right that the lender should lose on the transaction. The Institution has to buy the new book, or officers have to be kept waiting for it. It is most desirable that officers should not break through our Rules with regard to books by lending them to people who do not belong to the Lending Library.

Now, a Lending Library is of no use to people without a good Catalogue, and we have had a good many applications lately for them. Our present Catalogue is very large, expensive, and not up-to-date; it is a very excellent one in its way, but I am glad to say that the Council have determined to spend between £400 and £500 on the preparation of a new Catalogue. That Catalogue is actually now in course of production, but whether it will be ready during this year we do not know. Of course, very great care has to be taken in the production, and in it we hope to mark with asterisks books which cannot go out of the Institution, so that officers will know that it is no use applying for them. It will be a handy book, and we hope the price will not be over 4s., perhaps 3s. 6d., and therefore there is no reason why there should not be a complete Catalogue, supplemented every year by addenda, of the Library of the United Service Institution. By that

means we hope to bring the Library of the Institution up-to-date, and make it useful for the Army generally at home, and not merely the hunting ground of a few men who have time to come and look at the books here. The whole policy of the Council and of the Library Committee up to the present time has been to try and extend in every way the usefulness of the Institution to the members who never come here.

That brings me to the JOURNAL, and with regard to that I have to say a few words also. Nothing pleases us more than to receive suggestions or remonstrances or complaints about the JOURNAL, and the first I received was: Why did not we make it larger? Well, we could make it very much larger. I have here in my hand two sets of numbers. Here is the large number, and here is the small number. Last year we sent out three of those large numbers and nine of these small numbers. The postage of the one was 2d. and the postage of the other was 2½d.—a difference in postage alone between *this* issue and *that* of as much as £10. Well, we shall doubtless have plenty of suggestions: Why do not you use thin paper? I have enquired into that of the London publisher, and he says that thin paper will be no good. He says our paper is already weak—it has no "guts" in it. It has quite enough "guts" for ordinary use, and I think we shall keep to that paper. Then another suggestion will be: Why don't you send them to agents or to be stocked at Aldershot to distribute? Well, we have tried that, but it does not answer, and the guarantee with our members abroad now is that the members are responsible for the delivery of their JOURNAL. If they change their address, and do not tell us, we send the JOURNAL to the old address; but the Institution is personally responsible without any intermediary to the members abroad for the kindly reception they have given the JOURNAL.

Until some cheaper plan which will ensure that exactitude in delivery is before us, I do not think the Council will be inclined to try and save the £10 for the alteration. As it is, this JOURNAL is very much larger than it looks. My friend, Captain Garbett, has been kindly making some calculations. Last year the *National Review* had about one million words in it, and we calculated the number in three of *this* size and nine of *that* size of our JOURNAL, and found they came short of one million only by 40,000 words. So that I think if you are perfectly satisfied with the *National Review*, you should be satisfied that you get enough for your money in the JOURNAL.

During this year we shall have to issue a thirteenth number. The Essays for the Gascoigne Prizes will be in one of the ordinary twelve numbers, but we purpose to issue the Essays for the other prizes in a separate number, to advertise very largely in the provinces in the provincial papers, and sell it at a cheap price; and I have not the least doubt that owing to the great interest of the subject, it will have an enormous sale throughout the country. Another complaint comes from other quarters: Why do not you have naval lectures? Well, the military authorities approve of our discussing things here, and, therefore, we had the other day a General commanding at Aldershot and a Colonel on the Staff at Salisbury giving lectures, and men on full pay rose up and spoke, and there is no black mark against them. But the Navy do not encourage discussion; they do not like it. Until they alter their views, the only thing we can do—as we cannot have a discussion of naval matters in the Institution—is to see that our Naval Notes are much fuller in the JOURNAL than

our Military Notes. If we can give the military men lectures and notes, we are bound to give our naval members a correspondingly large portion of naval matters in another form.

Those are all the remarks I have to make, except one, which I think will interest you very much indeed. Of course, we think on the Council that our JOURNAL is very good, and the Library Committee think it is good, and the Editor thinks it is good. If it is good, all the credit lies entirely with the Editor. The Council do not interfere with the JOURNAL Committee, and the JOURNAL Committee merely back up the Editor. I have always thought it would be interesting if one could get honest full and free opinion as to the value of the JOURNAL, and I have got it, and got it by the merest chance. I noticed that in the accounts, the sale to the general public this year was very considerably larger than the sale last year, and I wondered who were the new purchasers, whether the country had been aroused by his lordship's patriotic crusade, and was turning to military subjects. I happened to be in the company the other day of Mr. Rees, the well-known military publisher, of Pall Mall, and we talked about the JOURNAL. He said: "Yes, I have had a good deal to do with your JOURNAL; I have a customer who since April has taken 100 copies every month." "A hundred copies a month by a new customer? Is he in the trade?" "No," said Mr. Rees. I asked who he was. Gentlemen, it is no less important a customer than the Government of Japan. (Hear, hear.) That young, rising naval and military Power, that virile nation, thinks so highly of our JOURNAL that for the present year it has been taking in one hundred copies a month for itself. I think, gentlemen, that that is the biggest feather our friend here, Captain Garbett, could possibly wear.

Captain CHARLES SLACK: With reference to the remarks of the Chairman, I should like to add my testimony to the valuable services rendered to the Institution by our present Secretary, who is ever ready to assist in anything that would advance the Institution. I should like, also, to add that I regret no notice is taken in the Report of closing the Institution at 7 o'clock during the winter months. This early closing does not at all help those officers who may be engaged in business up to 5 or 6 o'clock. It gives no time for study or research, and I am convinced it takes away the inducement of some who would otherwise join. I wrote a letter at the time, pointing this out, and it was signed by several of the members. The saving in economy is not, I think, well placed, and if the numbers attending are small, that is no reason for shutting them out.

The CHAIRMAN: The Secretary informs me that this question was considered, but it was found, on the average, that only 15 people attended after 7 o'clock. It was thought that the extra expense of lighting was not sufficient to warrant the keeping open of the Institution for the very small number of people attending. If there is a larger attendance, I have no doubt the Council will again take the matter into their consideration, and endeavour to meet your views.

Colonel G. G. A. EGERTON, C.B. (Yorkshire Regiment): I have a suggestion to make with regard to the JOURNAL of this Institution. Having read it now for twenty-four years, I can only say that the improvement of the JOURNAL during the last few years has been perfectly marvellous — it is immense. (Hear, hear.) But I would

venture to put forward and commend to the consideration of the Library Committee one suggestion, namely, that the lectures should appear more frequently, and, if possible, at closer intervals after their delivery. I will not take up the time of the meeting by labouring the subject, but I am perfectly certain that we who are on the active list, and are not able to get to the Institution to hear the lectures—we see them well, but shortly, criticised in the military Press—would like, if possible, in the following month, when a really good lecture is given, to read it in the pages of the JOURNAL. I have been told that there are objections to that, owing to the paucity of matter in the summer months, and that lectures must be put in the JOURNAL in the summer months to fill it up. I do not know whether that is so or not; but certainly when a good lecture is given at this Institution, and we see it criticised, we would like shortly afterwards, if it were possible, to read it in full in the pages of the JOURNAL.

The CHAIRMAN: I quite agree with the observations which have fallen from the last speaker, and I am sure the Council will take the matter into consideration. It stands to reason when there is a good lecture that the outside members, who cannot attend themselves to hear it, would wish to see it as soon as they can. The members may rest assured that the suggestion will be attended to as far as possible.

The motion for the adoption of the Report was then put and carried unanimously.

The CHAIRMAN: The Secretary will now read the Report of the Referees on the 1905 Military Essays.

The SECRETARY read the following Report:—

“The Referees chosen by the Council of the Royal United Service Institution to decide the awards for the Military Essay, 1905, beg to report to the Council as follows:—

1. The subject of the Essay was: ‘In the event of War with one or more Naval Powers, how should the Regular Forces be Assisted by the Auxiliary Forces and the People of the Kingdom?’
2. The number of Essays submitted to the Referees was 19.
3. The Referees award the ‘R.U.S.I. Gold Medal and Trench-Gascoigne Prize’ to the writer of the Essay No. 6, bearing the motto: ‘God helps those who help themselves.’
4. They award the ‘Second Trench-Gascoigne Prize’ to the writer of the Essay No. 8, bearing the motto: ‘God helps them that help themselves.’
5. They commend the following Essays, and recommend that they be printed in the JOURNAL in the order as entered:—
 No. 17.—‘Precept upon precept, line upon line.’
 No. 18.—‘Nunquam non paratus.’
 No. 9.—‘Union is strength.’

G. H. MARSHALL, *Major-General.*
 T. FRASER, *Major-General.*
 CHARLES E. HOBHOUSE, *Lieut.-Col.*

} *Referees.*

January 6th, 1906.”

The CHAIRMAN announced the awards as follows:—

The R.U.S.I. Gold Medal and Trench-Gascoigne Prize:—

Major W. Cyprian Bridge, D.A.A.G., D.A.Q.M.G., Mauritius.

Second Trench-Gascoigne Prize:—

Major H. R. Mead, 116th Mahrattas.

Commended:—Major A. B. M. Churchill, Royal Artillery;
Major R. A. Johnson, 1st Volunteer Battalion, Hampshire
Regiment; Major J. F. Cadell, Royal Artillery.

The Hon. Sir E. R. FREMANTLE, G.C.B., C.M.G.: My Lord and Gentlemen, I can sympathise very greatly with the Referees in the trouble they must have had in going through nineteen Essays, and as apparently a great many of them were of a very valuable nature, I have no doubt it gave them a great deal more trouble than usual. I have been a Referee myself, and therefore I can sympathise to some extent with them. It is an extraordinary fact that the first two Essays should have had practically the same motto. I can only say I think we shall all agree that it was an extremely good motto, for if we do not help ourselves, I am afraid Providence will scarcely help us as we should like it to do. It has been said, as we know well, that Providence is on the side of the big battalion. I have sympathy, also, with the competitors who have had to submit their Essays with a chance—and only a bare chance—of their being accepted. I intended to tell a story to you about an officer I knew when I was writing an essay. He thought it was the best joke he had heard for a long while. He said: "I do not exactly see what the joke is; I have known so many people who write essays and never hear anything of them again." The curious thing was that I went away from England for five years, and when I came back he was the first officer I met on the steps of the Club. And he said: "You got the Essay Prize after all." Therefore, I am glad to say that though the Referees had a very difficult task before them, they have succeeded, at all events, in pleasing one, and they can succeed in pleasing at least two competitors, and that is very satisfactory. As I am now on my legs, I should like to make a remark with regard to the naval lectures. As Colonel Lonsdale Hale has explained, there is no doubt that the Council can get naval lectures, but I am afraid we should get them principally from men who are more or less fossils. I am one of those who have lectured at the Royal United Service Institution more than once, but I should feel extremely reluctant to lecture now that so many changes are taking place. I can only wish that the Admiralty did encourage naval officers a little more in this direction. They did some little time ago, and we do not know what line Lord Tweedmouth will take in the matter. At all events, I venture to congratulate the Council and those who have charge of the JOURNAL, on having, as Colonel Lonsdale Hale has told us, added so much in the Naval Notes to the JOURNAL. I must apologise, perhaps, for having detained you too long. I have now pleasure in moving: "That a vote of thanks be accorded to the Referees, Major-General Sir G. H. Marshall, K.C.B., Major-General

Sir T. Fraser, K.C.B., C.M.G., Lieut.-Colonel C. E. H. Hobhouse, M.P., for their valuable services in adjudicating on the Essays."

General Sir M. DILLON, G.C.B., C.S.I., seconded the motion, which was carried.

The CHAIRMAN: The Secretary will now read the Report of the Referees on the Special Military Essays.

The SECRETARY read the Report as follows:—

"The Referees in submitting their opinion on the Essays for the Special Prizes, 1905, desire to state that they do not consider that any of the Essays submitted to them offer a thoroughly satisfactory solution of the problem laid before the writers; this fact being in part attributable to the limitations imposed by the wording of the conditions. They award the First Prize to Essay Number 65, bearing the motto, 'Tout citoyen se doit à la défense de son pays'; the Second Prize to Number 101, bearing the motto, 'Der gute ist des besten feind'; and the Third Prize to Number 54, bearing the motto, 'Mene Mene tekell upharsin.' The following Essays might be considered by the Council for publication: No. 30, 'Holdfast'; No. 55, 'Nunquam non paratus'; and No. 108, 'Pro Rege et Lege.'"

EVELYN WOOD, *Field-Marshal*

(*Chairman*).

CHARLES W. DILKE.

SPENSER WILKINSON.

F. S. ROBB, *Brigadier-General*.

HUGH PEARSE, *Colonel*.

Referees.

The CHAIRMAN: The subject of the Essay was: "The best, least irksome, and least costly method of securing the male able-bodied youth of this country for service in the Regular or Auxiliary Forces as existing, and for expanding those Forces in time of war."

The CHAIRMAN then announced the awards as follows:—First Prize, No. 65, Captain F. B. Dunlop (Worcestershire Regiment); Second Prize, No. 101, Colonel F. N. Maude, C.B., 1st Hampshire R.E. (V.). Third Prize, No. 54, Major G. F. MacMunn, D.S.O., R.F.A. Commended: Captain S. C. Birch, Major R. F. Sorsbie, R.E., and Major J. F. Cadell, R.F.A.

The CHAIRMAN: It is now my pleasant duty to propose a vote of thanks, which I do most sincerely, to the Referees. I do not exactly know how many Essays there were, but I believe there were something like one hundred and twelve altogether. It has been a very serious duty to undertake to read over a hundred and twelve Essays. Field-Marshal Sir Evelyn Wood told me that it took up the whole of his time, and interfered with his hunting. I can quite

understand that it has been a very serious matter. I have much pleasure in moving:—

“That a vote of thanks be accorded to the Referees—

Field-Marshal Sir H. E. Wood, V.C., G.C.B., G.C.M.G.,
The Right Honourable Sir Charles Wentworth Dilke,
Bart., M.P.,

Brigadier-General F. S. Robb, C.B., M.V.O.,

Colonel H. W. Pearse, D.S.O.,

H. Spenser Wilkinson, Esq.,

for their valuable services in adjudicating on the Essays.”

Colonel LONSDALE HALE (in the absence of Admiral Sir R. H. Harris): I have pleasure in seconding this motion. I have much sympathy with the Referees. When the Essays first came in we formed a small committee, consisting of the Secretary, the Editor, and myself, to classify these hundred and twenty Essays. We had to go through each and endeavour to classify them. That gave me some idea of the awfulness of the task of looking over them. The Referees fully deserve every thanks we can possibly give them.

The motion was then put and carried.

The CHAIRMAN: Gentlemen, I very much regret that I am now obliged to go away. I will ask Major-General Sir George Marshall to occupy the Chair.

Colonel the Hon. O. V. G. A. LUMLEY: Sir George Marshall and gentlemen, I beg to propose: “That the thanks of the Meeting be accorded to the auditors, Messrs. Wilde and Ferguson Davie, for their services, and that they be re-elected auditors for the ensuing year at a fee of twenty-five guineas.”

Colonel T. S. CAVE seconded the motion, which was agreed to.

Colonel E. T. RODNEY WILDE: I am very much obliged to you for the vote of thanks which you have just passed to the auditors in connection with their year of work, and for the honour you have done me in re-electing me as auditor. It is very pleasant to see that this year the accounts have come out so satisfactorily as regards your balance. I am pleased to say that the work in connection with the books and the keeping of the accounts is very satisfactorily done, and reflects great credit on the Assistant-Secretary, who is the gentleman answerable for it.

Commander W. F. CABORNE, C.B., R.N.R.: Sir George Marshall and gentlemen, I rise to move a resolution, having for its object an alteration in the bye-laws of the Institution, inasmuch as they affect the appointment of members to the Council, when vacancies occur, during the period which elapses between two annual general meetings. At the present moment our system is that, candidates who have been unfortunate in the ballot are placed on lists in their respective sections, and are brought on to the Council automatically, when vacancies occur in the particular sections to which they belong, according to the votes

they have received. Now, in theory, that is a most excellent arrangement, it could not possibly be better; but in practice it has its disadvantages. For instance, it is quite possible, giving you the extremest case, for a man to become a member of the Council during the period which elapses between two annual general meetings upon the strength of only one vote, and that vote his own, to the exclusion, it may be, of some officer who, from the appointment he holds, or from his distinguished services, or from some other cause, might be of the greatest value to the Institution. Now what is proposed is simply this, that the Council should have the power to appoint officers to any vacancies that may occur during the aforesaid periods. In asking for that we are not asking for anything unusual, because it is a power that is inherent in the Councils or Committees of most, if not all, Societies, and of the governing bodies of all our great commercial undertakings. I think I have demonstrated the advisability of the change, and, therefore, I will simply propose:—

“That Sections 9 and 10, Chapter IV. of the Bye-Laws, which now read—

9. ‘Vacancies occurring during the ensuing year will be filled in order from the lists of non-elected nominees arranged according to the number of votes obtained at the Annual General Meeting. The lists shall become null and void at the next Annual General Meeting.’
10. ‘If during the interval between one Annual General Meeting and another there are no non-elected nominees to fill a vacancy or vacancies occurring in the Council, the election to the vacancy or vacancies shall devolve on the Council.’

be altered to read as follows:—

‘The duty of filling vacancies occurring on the Council between the Anniversary Meetings will devolve on the Council.’”

Colonel Lonsdale Hale, who will second the motion, has asked me to add the following, which personally, as the proposer, I see no objection to:—“Providing that any vacancy occurring subsequently to the 31st December shall remain vacant until the next Annual General Meeting.”

Colonel LONSDALE HALE: I must apologise for being so much on my legs this afternoon. I was one of the originators of this system which is proposed to be superseded. We thought then that it would answer, but for the reasons given by Commander Caborne it has been found that it does not answer. We have been driven sometimes, and might be driven again, to bring on a man with only one vote. I think it is far better that it should be final. The reason why I brought this in was to break up the close borough; but unless you pass the rider the close borough may come in again, because shortly after the annual meeting three members or four members might go off, and the Council might put in their own nominees; whereas, if you pass the resolution with a rider, it is pretty sure that the election will remain open.

The motion was then put and carried.

A ballot to fill 1 Naval, 3 Regular Army, 1 Militia, 1 Yeomanry, and 2 Volunteer seats on the Council, was taken. There being no competition for the Royal Naval Reserve seat, Commander W. F. Caborne, R.N.R., was re-appointed.

The Scrutineers announced the result of the ballot as follows:—

Royal Navy.

Captain the Hon. A. E. Bethell, C.M.G., R.N.

Regular Army.

Colonel L. A. Hale.

Brigadier-General C. G. Donald, C.B.

Colonel the Hon. O. V. G. A. Lumley.

Militia.

Colonel W. A. Hill, C.B.

Yeomanry.

Colonel R. B. Colvin, C.B.

Volunteers.

Colonel T. S. Cave, V.D.

Colonel W. C. Horsley, V.D.

Colonel LONSDALE HALE: I have much pleasure in proposing a vote of thanks to the Scrutineers, Colonel E. T. Rodney Wilde and Lieutenant H. T. A. Bosanquet, R.N. I am sure we all thoroughly appreciate the great pains they have taken in arriving at their decision.

Major-General Sir G. H. MARSHALL, K.C.B., seconded the motion, which was agreed to.

Major-General Sir E. T. H. HUTTON, K.C.M.G., C.B.: Sir George Marshall and gentlemen, I have been asked to move the following resolution:—

“That a vote of thanks be accorded to the following officers who, having served three years on the Council, or having proceeded on a tour of service abroad, now retire:—

Royal Navy.

Captain G. A. Ballard, R.N.

Royal Naval Reserve.

Commander W. F. Caborne, C.B., R.N.R.

Regular Army.

Brigadier-General C. G. Donald, C.B.

Colonel L. A. Hale.

Major-General G. U. Prior.

Militia.

Colonel W. A. Hill, C.B.

Yeomanry.

Colonel Sir W. A. Baillie-Hamilton, K.C.M.G., C.B.

Volunteers.

Colonel T. S. Cave.

Sir G. H. Chubb, Bart."

I feel sure that all here who have served on the Council of the Royal United Service Institution will accord a very hearty vote of thanks to the gentlemen whose names I have mentioned. (Hear, hear.) Personally, I have served on the Council for three years, during a very stormy period of the history of this Institution, which I daresay Colonel Lonsdale Hale will recall, for he was the leader of the reform party, of which I was a humble member, a party which was instrumental in moving the Institution from its old buildings over the way into its present palatial establishment, which forms such an attraction to this great Metropolis of London. I have very much pleasure in submitting to the meeting the names of the gentlemen which I have read over, and to whom I trust you will accord a very hearty vote of thanks.

Major-General Sir THOMAS FRASER, in the absence of Vice-Admiral Sir R. N. Custance, K.C.M.G., C.V.O., seconded the resolution, which was carried unanimously.

Admiral-of-the-Fleet Lord WALTER TALBOT KERR, G.C.B.: I have great pleasure in moving, "That a vote of thanks be accorded to the Chairman, Field-Marshal Earl Roberts, for presiding." I am sure this resolution needs no words of commendation from me.

Lieut.-General the Hon. Sir N. G. LYTTELTON, K.C.B.: I have great pleasure in associating myself with Lord Walter Kerr in seconding this vote of thanks to Lord Roberts; and I do not think we ought to forget Sir George Marshall, who has presided over us since Lord Roberts' departure.

Major-General Sir G. H. MARSHALL, K.C.B.: I much regret that Lord Roberts had to go away. I am sure he would have very much appreciated the compliment you have paid him. That, gentlemen, concludes the business of the meeting.

Royal United Service Institution.

SPECIAL PRIZE ESSAYS.

THE SIX BEST COMPETING ESSAYS FOR THE PRIZES OFFERED BY THE LATE COLONEL STANLEY ARNOLD, C.B.

SUBJECT :—

‘The Best, least Irksome, and least Costly Method of Securing the Male Able-bodied Youth of this Country for Service in the Regular or Auxiliary Forces as Existing, and for Expanding those Forces in time of War.’

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FIRST PRIZE.	100 Guineas.	Captain F. P. DUNLOP, Worcestershire Regiment	1
SECOND PRIZE.	30 Guineas.	Colonel F. N. MAUDE, C.B., <i>p.s.c.</i> , 1st Hampshire R.E. (V.) late R.E.	28
THIRD PRIZE.	10 Guineas.	Major G. F. MACMUNN, D.S.O., R.F.A.	57

Honourably Mentioned in order given :

Captain S. C. BIRCH, h.p. (late Northumberland Fusiliers)	..	85
Major R. F. SORSBIE, R.E.	.. .. .	114
Major J. F. CADELL, R.F.A., Secretary R.A. Institution	..	181

SPECIAL MILITARY ESSAY, 1905.
FIRST PRIZE (ONE HUNDRED GUINEAS).

Subject:—

“THE BEST, LEAST IRKSOME, AND LEAST COSTLY
METHOD OF SECURING THE MALE ABLE-BODIED
YOUTH OF THIS COUNTRY FOR SERVICE IN THE
REGULAR OR AUXILIARY FORCES AS EXISTING,
AND FOR EXPANDING THOSE FORCES IN TIME OF
WAR.”

By Captain F. P. DUNLOP, The Worcestershire Regiment.

“*Tout citoyen se doit à la défense de son pays.*”

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Our strategical problems.

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Indifferent quality of our Regular recruits.
Special difficulties caused by voluntary system of enlistment.
Merits and demerits of our Auxiliary Forces.
Adoption of Obligatory Service on the Continental model
undesirable.

III.

Necessity of arousing public interest in our military problem.

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I.

BEFORE making any proposals for the solution of the recruiting problem, it is indispensable that we should understand the nature of the Services for which the armed forces of the Crown are maintained. The following question must be answered:—"Where and against whom will our Navy and Army be required to act?"

The majority of European Powers, unburdened by extensive over-sea possessions, can define their military needs to a nicety. With the British Empire it is far otherwise. There is no first-class Power in any part of the world with whom we are not in contact, either geographically or politically. There is no important nation of whom we can say: "Let them do what they will; let them expand in any direction they please, for their affairs are none of ours." Our dominions can never be an intrenched camp enclosed by a continuous ring of armed men; they are an open territory to be defended by the swift blows of a mobile force moved this way or that, as occasion directs. Our strategical problem, on whose right understanding depends the success of every military reform, is this: To recognise those political issues which might conceivably be referred to the arbitrament of arms, and then to devise a force capable of dealing instantly with the more pressing dangers, and of ready adaptation to the remainder.

The wars which we may have to wage are divided into two classes: small and great wars, affairs of Imperial police work, with which we are tolerably familiar, and wars on questions of world-politics, such as we have not fought since the days of the Crimea and of the Peninsula.

The experience of all nations tends to prove that the former are best dealt with by a professional standing Army, which is in effect no more than a large constabulary force. Such an Army we possess in our Regular Forces, which have successfully policed the Empire since they first went into garrison at Tangier.

Modern experience also proves that war on a large scale can only be waged with success by a whole nation, ready to reinforce large forces mobilised at the outset by every able-bodied man; by the employment, in other words, of far greater forces than the richest nation could afford to keep permanently under arms. We possess the nucleus of such a force in our Militia, Yeomanry, and Volunteers, on whom we shall have to depend in any great national struggle of the future.

Where may we expect this great struggle to take place? That is the harder question to answer.

There are two cases to be considered. First, the assumption of the direct offensive by our enemies, either against the United Kingdom or against some part of our outlying dominions; secondly, the necessary assumption of the offensive by ourselves, for the purpose of bringing our enemy to terms, or of causing him to desist from some line of action prejudicial to our interests. The invasion of Ireland by the French in 1798 and of Natal by the Boers in 1899 are examples of the first cause. The invasion of the Peninsula in 1809 to check the aggrandisement of France, and of the Crimea in 1854 to prevent the overthrow of Turkey by Russia are fair examples of the second.

Let us try to put ourselves in the place of a nation about to declare war on Great Britain, and desirous of crushing us with all

speed. The first and most tempting course of action is to strike at the heart of the Empire, to land in England, capture or drive out the Government, seize the factories and stores of war material, and reduce the naval bases from the landward side.

It is true that a certain school of strategists—sailors and politicians for the most part—absolutely deny the possibility of any invasion until our fleet has been beaten.

On the other hand, we have the opinion of Napoleon and von Moltke that such an invasion is feasible under other circumstances than a complete control of the sea. The latter of these two officers has at the least some claim to the position of an impartial critic. In fact, it remains to be proved that invasion is impossible.

Pending the production of evidence, it is our clear and bounden duty to be insured against a risk so alarming. If invasion came, it would come as a surprise, and we must be prepared to meet it with the utmost speed, before it penetrates our territory to any distance. For, even if these hypothetical invaders were foredoomed to ultimate failure, it is impossible to foretell the extent of the panic which their mere presence within a few marches of the capital would produce. Our defending forces must be capable of moving to the attack of the invaders not within a week but within twelve hours. It is indeed conceivable that a striking force of Regulars would be the proper weapon for the land defence of these islands, and that the slowly mobilised Auxiliary Forces would find their true rôle in those over-sea operations for which our naval power gives us the choice of time and objective.

There are only two great Powers in a geographical position to attempt such a raid on our home dominions. Those two are France and Germany; but there are two others, the United States and Russia, each of whom is capable of attacking us on the land frontier of an outlying possession. The military development of both Canada and the United States is only rudimentary. The latter have, however, by far the greater resources, so that in the event of war we should be compelled to furnish very great assistance to the levies of the Dominion.

The military organisation of Russia, whatever its defects, is still many times more formidable than our own, and the problem on the Indian Frontier is a double one. Not only have we to provide for the defence of our own territorial frontier, but also to protect the integrity of the buffer States which we have been at such pains to maintain beyond the border. The latter would appear the harder task of the two. If Russia were to advance directly against our territory, the advantage of rapid communication would be on our side; but if she were to commence operations by attacking Afghan or Persian forces on the far side of their territory, or, as the Premier suggests, by extending her railways into Afghan territory, it is we who would have to advance from our depôts on the railway across an inhospitable country against forces posted within easy reach of the railhead south of Penjdeh.

To meet contingencies on this frontier, we can muster a force of from 150,000 to 200,000 men. The greater part of these—the Native Army—is a long-service force destitute of trained reserves, while the remainder is dependent on the Home Army both for its reserves and for its recruits. When the Home Army was mobilised for service in South Africa, it absorbed the whole of the reserves

and all available recruits. The Indian establishment was kept at strength by the retention of the men who would otherwise have passed to the reserve. Had it become involved in active operations and suffered any casualties, it would have been impossible to replace them, except at the expense of the forces in the field elsewhere. Our reserve is of insufficient strength to replace the casualties of active service in our Army abroad, and also to complete our regiments at home to their war establishment. In making proposals for the expansion of our forces in war time, we must keep in view the fact that a long-service force, equally with one recruited on a short-service system, requires to be fed with a constant supply of reinforcements, and that to use the sources of this supply as combatant units is to condemn the original fighting force to attrition and ultimate inefficiency.

Leaving the question of an attack on our territories, we have to consider the case in which the political offensive on the part of another Power might force us to assume the strategical offensive. Every European war in which we have engaged since the days of Marlborough has been of this nature. Our wars to check the growing preponderance of Louis XIV. and Napoleon in Western Europe, or of Russia in the Near East, though conducted on the strategical offensive, were essentially defensive wars from the political standpoint. In no case were we actually attacked, but in every instance our failure to act on the offensive would have laid us open to be attacked at a disadvantage in the immediate future. The present war between Russia and Japan is a striking instance of such operations; the political aggression of Russia clearly forced the Japanese to take the strategical offensive.

It is not impossible to suppose a parallel case at our own gates, in which Holland would play the part now assumed by Korea, and it is certain that a strong base of hostile operations on the Scheldt would be as incompatible with our national safety as a Russian arsenal at Masampho with that of the Japanese. It is not impossible to suppose aggression by a great military power in the direction of the Bosphorus or Adriatic which would constitute as grave a menace to our communications with Asia as past activities of Russia in the same sphere.

It is true that our existing military organisation, however much perfected, could never enable us to cope single-handed with a great Continental Power at her own doors. But the disturbance of the balance of power would always be viewed with concern by other nations than ourselves. In all probability our *rôle* would be the accustomed one of forcing the enemy to face two ways, and thus to lose his numerical superiority in the main theatre of land operations. As the Dual Alliance effectively safeguards France by threatening Germany with a war in the East, so might a well-planned descent on Schleswig-Holstein turn the balance of strength in Alsace-Lorraine. In the event of our interests being on the other side, an expedition to the Continent to the Gulf of Lyons, or, in a lesser degree, to Algiers, would materially hinder the despatch of men and munitions to the north-eastern frontier of France. Russian aggression towards Turkey or Scandinavia might well call for similar action, while in the case of minor Powers unpossessed of navies, a military expedition might be the only means of obtaining redress for wrongs inflicted on British subjects or British interests.

It cannot be too clearly understood that the possibility of our becoming involved in war with a civilised nation is by no means remote, that our claim to the position and privileges of a great Power is only valid so long as we are able to enforce it at need, and that terms of peace cannot be so enforced except from a point within the enemy's territory, which, in the nature of things, no battle-ship can reach.

Our chances of savage warfare need no discussion. The enforcement of the Pax Britannica is, indeed, no chance at all, but a familiar event of monotonously regular recurrence. Few people realise the preparations it entails and the number of lives it claims each year. To meet this drain is the first of our military requirements; only it should not be allowed to overshadow the remoter but wider issues.

Last, but not least, we require crews for our ships and garrisons for our naval bases. Whether the latter are furnished by the Army or the Navy is immaterial for the purposes of this essay; the numbers to be provided will remain the same.

II.

These being, very roughly, our military requirements, what are "the Regular and Auxiliary Forces, as existing," which we maintain to meet them?

First, we have our Navy, whose recruiting is certified by the responsible authorities to be in a highly satisfactory state.

Considering the far harder life led by the sailor, it may be taken as evidence of the popularity of long service as opposed to the nine or three years' colour service, which must always be disastrous to the soldier, whatever their conveniences to his employer.

As, however, long service precludes the formation of any considerable reserve, it is not easy to see how casualties are to be replaced or new ships commissioned during a war of any length.

It is not necessary to deal with this deficiency of reserve as a separate question, for it is intimately connected with the question of military recruiting. If a satisfactory scheme can be devised to fill the ranks of the land forces, there should be no difficulty in diverting to the more popular Service as many men as may be held necessary.

Turning to our land forces, it must be confessed that they are deficient both in quantity and in quality. It is of no avail to mince matters; to recognise our failings and take steps to amend them is the truer patriotism.

We have a Regular Army sufficient, possibly, in cadres for the needs of our minor wars and for the peace garrisons of our greater coaling stations. It provides us with some 70,000 men in India, some 20,000 in the Colonies and naval bases, and, theoretically, an equal number at home.

But it is recruited on an entirely inadequate system, which fails to provide either the numbers or the quality of men needed for the most arduous of all professions, and which has long since reached the limits of its expansion.

One cannot blind one's eyes to the fact that, both in intellect and physique, the British recruit is hopelessly outclassed by the Continental conscript. For all his virtues, Thomas Atkins is the froth

of our social system—a waste product of the national industries, a man, as he himself is the first to admit, who has failed or feared to make his way in civil life.

"Oh! come to the cook-house door, boys; come to the cook-house door!

Oh! that's what we 'listed for boys; that's what we 'listed for!"

Such are the words which he has set to the music of the dinner bugle, and the stock retort addressed to the recruit who gives himself airs is to ask why he was "flying the flag of truce" when he came up to barracks. Flying the flag of truce is an euphemism for displaying one's undergarments through the rents in one's outer clothes.

Neither can the present system of serving for nine years with the colours and three in the reserve produce an adequate number of reservists.¹ When the period of service was seven and five, the reserves were no more than sufficient to complete units to war strength. When the period is divided as at present, the number of reservists and also the number of men passed through the ranks in a given period is still further decreased.

In the case of three years' colour service, on the other hand, quality suffers at the expense of quantity. Three years' service under Continental conditions of recruiting and training are quite sufficient to make a good soldier.

The conscripts, as they are generally but inaccurately called, join at a fixed date in the autumn, have finished their recruit's drill and preliminary firing early in the spring, and are then ready to take their places in the ranks. Since their instructors have no fear of discouraging recruiting, training can be pushed to the extreme limits of exertion; the day's work is commenced before sunrise and continued until four or five o'clock in the evening.

In England it is far otherwise. Imagine the horror of a school-master whose pupils, instead of all joining at the beginning of the term, arrived in dribblets at odd times. Yet this is what happens in the hardest of all schools—the Army.

Add to this the fact that, in order to prevent the supply of recruits shrinking still further, the work has to be made as easy as possible. The average recruit does not join with the object of working hard; he is attracted to the Army by the fact that it is a cheerful and easy-going method of supporting life. Let it be rumoured by some discontented soldier on furlough that the work in such and such a regiment is over hard, or the punishment severe, and the recruiting for that regiment will fall off. So that in the long run the amount of work given to the soldier is very much what he sees fit to do, and no more.

These are the two great difficulties of a voluntary system: First, that recruits must be taken when they offer themselves, and not at the most convenient time for their instruction; and second, that their training must always be a compromise between what they ought to learn and what they are willing to undergo.

Our Regular Army is manufactured under difficult conditions from indifferent materials. If good results have at times been achieved with such inadequate means, one can only wonder what might have been accomplished under a better system.

¹Report of War Commission; Appendix.

This Regular force is capable of supplying our peace garrison in India and very small garrisons for certain coaling stations. The remainder—that is to say, the half of it quartered in the British Isles—is, as it stands, of little fighting value. By calling up the whole of the reserves and by improvising staffs and administrative services, it might be despatched to the front within a fortnight of the order to mobilise. One cannot call it a striking force for it would be absurd to expect effective co-operation from such an incoherent assemblage of units.

But, by the very fact of mobilising the Home Army, the units already abroad would be deprived of their sources of supply. If the reserves are with the colours of the Home Army they are no longer available for the purpose of reinforcing the battalions in the field. On the other hand, the home battalions, once mobilised, cease to fulfil their function as training schools at the very moment when the training of as many men as possible should be proceeding with the utmost despatch. The battalion cannot be used as an instrument of offence without abrogating its function as a training school, nor can it be used as a training school without losing its immediate value as a fighting unit.

The second line of our land forces is the Militia, maintained at present by voluntary enlistments, and trained for twenty-eight days each year. The argument raised as to voluntary service in the line applies to this body with redoubled force, for if, under the mild conditions of a voluntary *régime*, it is difficult to turn out a finished soldier in three years, how is one to be made in a few periods of four weeks?

Granted that this force has rendered good service on the lines of communication, and by relieving the Regular garrisons at home and in the Mediterranean. But the test of good soldiers is, and always must be, this: Whether they are individually and collectively as good as an equal number of any troops which may be brought against them. Judged by this standard, it is impossible that the Militia should do otherwise than fail.

This much, however, the Militia continues to give us: an organisation, imperfect, perhaps, in detail and badly officered, but which contains in its traditions, and even in its present state, the nucleus of a great national force, to which all those who desire to serve their country within certain limitations might be attracted.

The Yeomanry are officially classed with the Militia, but in their conditions of enlistment and training bear a closer analogy to the Volunteers.

The Volunteers, who, with singularly little encouragement from their fellow countrymen, have prepared, according to their means, to perform the first duty of citizenship, are some 300,000 strong. This force contains men of every degree of military proficiency, from privates who have just mastered the rudiments of drill and musketry to officers who have specialised on several subjects, who have learnt most things that are to be learnt from books, and lack only practice in the handling of men to rank with the very best.

Sad to say, this promising force is in no sense a field army. It is even more thoroughly divided into water-tight compartments than the other vessels of our military power. The men see little of each other or of their officers. The battalions often consist of isolated companies from different towns, who have no more real claim to be

called a battalion than two battalions dumped in the same field to be called a brigade. Some corps, it is true, have been brigaded together and have provided themselves with a rudimentary organisation of supply and hospital services; but their *ex-officio* brigadiers, the commanders of adjacent Line depôts, have other duties as a first call on their services, even if they are not to disappear under the new system of grouped regimental districts. Other corps have not even this attempt at higher organisation in their favour.

Such are our military assets: a Regular Army with an insufficient reserve, hampered in its work of training by the quality and by the system of obtaining its recruits; a Militia which is only the shadow of a great possibility; and a Volunteer force which is no more than a crowd of armed men with a variable and unsatisfactory standard of military knowledge.

How are we to strike a balance between these small assets and the great debt for which we are individually and collectively liable to our country?

Our first impulse is to reply that nothing but our best is worthy the acceptance of so great a nation. The children of lesser Empires think the two best years of their lives, followed by further periods of service and an almost lifelong liability to be called out, no excessive sacrifice to offer for the honour and welfare of their fatherland. Can we, whose interests encircle the whole earth, and whose territories march with those of others at a dozen points, hope to secure ourselves against disaster at a lesser cost? The answer is a dubious one. That we could defeat any invasion of our territories with a smaller organisation is probably true; that we could impose our will upon one of the great Powers with less than the development of our whole force is improbable.

The question of expense is another factor in the problem. Even assuming that the burden of Imperial defence were made to fall equally upon every person in the King's Dominions, could we find the money to maintain an overwhelming navy and an irresistible army?

It is to be remembered that the introduction of obligatory service would not remove any appreciable portion of our existing burdens; it would still be necessary to provide a voluntarily enlisted force for foreign service, and that organisation for its training and recruiting which we know as the Home Army. Even assuming that the monetary cost were equally shared by our Colonies, the sacrifice of men must needs fall upon the United Kingdom. The conditions of life in the Colonies, where white labour is so much more precious than at home, and where all the whites in the colony would often be too few to cope with internal disorder amongst the natives, preclude the idea of taking two years from the colonist's life, or of employing him in large numbers outside his own colony.

Considering, then, the burden of Empire which we already bear, and considering the grave additional charges which would be placed upon us by the introduction of compulsory service, not only in yearly maintenance, but in a vast initial outlay for housing and equipment, we may fairly assume that it is no lack of public spirit which causes English public opinion to run so strongly against a military system based on that of the great European Powers, but rather an intuition that the additional burden would be disproportionate to the national resources, and that, protected to a large extent by our Navy and by the sea, we should be paying on a smaller risk an additional insurance

equivalent to that which other nations pay to cover the whole of the dangers by which they are threatened.

With a clear conscience, therefore, and with no sense of shirking the citizen's first duty from base motives, we may approach the problem of bestowing upon our youth a military training which shall be cheaper and less irksome than two years' service in the line, but none the less adequate to our needs, and capable of giving almost unlimited expansion to our armed strength in the hour of need.

By the terms of our reference, this training is to be obtained through the medium of the Regular or Auxiliary Forces, as existing. It is evident that the mere fact of filling these somewhat attenuated forces with the able-bodied youth of Britain would necessitate changes of detail almost amounting to a change of system. But, whatever changes are found unavoidable, we will bear in mind the principle of preserving three distinct but affiliated forces: the regular standing Army with its reserves, the national Militia, and the great reserve of Volunteers, corresponding in a certain degree to the Active Army, the Landwehr, and the Landsturm, of foreign Powers.

III.

How are we to get the youth of the country into these three forces, which we accept as the basis of our designs?

The first difficulty to be faced is, that we belong to a self-governing country, and that, whatever the excellence of our schemes, we cannot alter the existing state of affairs in any respect without the consent of the electorate. Therefore, the first process is to convince the voters that an expansion of our military system is necessary, and to inspire them with enough patriotism to make the necessary sacrifices.

I speak of sacrifices advisedly, for, although we are searching for the least costly and least expensive method of filling our armies, it is sheer folly to think that such expansion can be obtained except at a price.

Now it is not an easy matter to influence the electorate in a question of such far-sweeping issues. It is only one man in a thousand who lives half a life-time without getting into a mental groove, which makes his outlook on the broader aspects of life a very narrow one. To think in continents and empires is above the unaided powers of a man whose personal interests are circumscribed by his parish boundaries.

However, there are certain exterior influences which can be brought to bear upon the slow wits of the public. The greatest of these is one for which we may always hope, but upon which we can never count. That is the advent of a leader of thought, of a great statesman or publicist, whose personality will appeal to the popular imagination, and whose words will wing their way into the dullest of hearts.

There is a second influence from which we can only pray to be spared. That is an object lesson, an ordeal by fire, such as those from which have arisen a new Germany and a newer France.

There are still two powers by which we may well hope to move the dull weight of public opinion. Of these the first is, to a large extent, in the hands of the State. The second, although not State-controlled, is in the hands of able men, whose profession naturally

brings them into touch with the wider interests of the Empire, and of the world at large. I refer, of course, to our schools and to our public Press. Their power over the opinions of our youth and manhood is too great to be appraised in words, and on them we must depend for a wider recognition of our Imperial birthright, and the obligations which it entails.

Let us therefore begin by impressing upon all those who attend church or school, and all who read newspapers or books, that every citizen is personally responsible for the defence of the State under whose protection he exists. Let us familiarise the public with the inner workings of our military life. Let us invite inspection of our soldiers at work and at play. Let those of us who are in the Regular Service avoid the tendency to consider ourselves a caste apart, and to dissociate ourselves and our profession from the social system of which we form indispensable units.

In plain English, let us advertise and let us do it handsomely, not through the medium of small and inartistic posters outside a police station, or an occasional dingily-dressed pensioner on the kerb stone. If posters attract men, let us have the brightest and most artistic which money can buy. If the uniform is an inducement, let our officers make sacrifice of their modesty by wearing it in public, off duty. No one wishes to deny that the wearing of mufti was a necessary concession in the days of throat-cutting and unpractical scarlet uniforms, but it passes comprehension to see why one should not go shooting or golfing in service dress, nor dine out of barracks in the very comfortable kit one wears at mess. The wearing of mufti entails the duplication of almost every article in the officer's wardrobe, from boots to collars, with expense to himself in buying them, and expense to the State in transporting them all over the Empire. The only plea in favour of mufti, other than that of old established custom, is, that officers in uniform would have to behave with greater propriety and circumspection than at present—an argument which cuts both ways. But there could be no more convincing answer to the widespread prejudice of the middle classes that soldiering is hardly a respectable profession than the daily presence of the uniform elsewhere than in the meaner quarters of our large towns. And this prejudice against the army is one of the greatest obstacles to recruiting.

In France, literary works of striking military merit are "honoured with a subscription" by the Minister of War. It would pay us equally well to set aside two or three thousands a year to be paid as premiums, not only on military works of technical merit, but also on such as were likely to popularise the service with the public. The Army has everything to gain and nothing to lose by publicity; it is disliked by those who know nothing of it, and loved best by those who have served in it the longest.

Having thus persuaded the public of the duty that they owe to their country, and having demonstrated that the soldier is not necessarily an outcast or a martyr, the schemes which we are about to introduce will stand a chance of being impartially or even favourably considered.

I propose to take our problems in an inverse order to that in which they are set forth; to deal first with the provision of cadres, then with the expansion of our forces in time of war, and lastly, with the recruiting of the Regular Army.

IV.

The first difficulty to be overcome in establishing a school, whether of arms or of classics, is the provision of an adequate staff of teachers. If the whole Nation were trained in arms up to the standard required of a smart private soldier, our case would be little better than at present, unless we possessed a body of thinkers and leaders, the brain and nerve to co-ordinate and direct this great mass of animal strength. Time and again a single master-mind has organised apparently useless material into a formidable weapon of war. Time and again the greatest bravery and skill at arms has failed before forces of less individual value, but more scientifically led. The retreat of the Ten Thousand, the conquest of Hindostan, the defeat of the French levies on the Loire by inferior numbers of Germans, are only a few of the instances which should confute the advocates of hedgerow riflemen.

Our present military educational establishments are incapable of supplying the officers required for the Regular Forces alone. For every officer of the Line who passed through Sandhurst, there is another who entered the service through the Militia; that is to say, by an unsatisfactory process, which lends deceptive appearance of strength to the Militia, and in no way guarantees that the officers so obtained have that good general education which is indispensable for the man who aspires to be more than a mere repeater of his superior's orders. Such a system further implies that in the event of war, when the demand for officers is increased, the Militia is immediately deprived of all its best junior officers, and their places filled by lads with even less military knowledge than the men they are to command.

The corps of officers contains a proportion of rankers. There is no better school of primary soldiering than the ranks. But the apparent value of the ranker is discounted by the fact that those who choose this mode of obtaining a commission usually do so because they have lacked either the application or the brains to pass the Sandhurst and Militia tests. Consequently, like all who have a difficulty in thinking quickly, they display a tendency to rely on the judgment of others, which spells lack of initiative.

Nor can entrance through the Universities be regarded as a serious means of filling the deficiency, for the excellent reason that no man who wishes to do well in his profession will ever choose a method of entering it, by which he begins at three or four and twenty, on the same footing as boys of nineteen, who have just left Sandhurst.

There can only be one right way to recruit officers for the permanent cadres of our land forces, whether of the standing army or of occasional forces such as the Militia and Volunteers. That way lies through a properly organised military college. If one military college is incapable of turning out enough officers, other similar colleges must be established. Any other methods of raising officers must be regarded as mere makeshifts.

If great care be required in the selection of Regular officers, who have the greater opportunities of self-improvement after joining, *a fortiori*, our Irregular troops, whose opportunities are infinitely less, must have even better and stronger cadres, if they are ever to stand against Regular troops. Good officers can do a great deal with indifferent men; indifferent men with second-rate officers are best out

of the way. Granting that the bulk of the Auxiliary rank and file can never have a thorough military training, none the less, an Auxiliary regiment with Regular company leaders would be as different from the Auxiliary regiment with no Regular officer but the adjutant as a regiment of Haussas or Soudanese with white officers from a horde of "friendlies" led by their own chiefs and only indirectly controlled by a single political officer.

What, then, is the cheapest and least irksome method of training so many officers?

Sandhurst supplies about half our Regular officers of the cavalry and infantry, Woolwich supplies practically the whole of those for the artillery and engineers. It would therefore take three such military colleges to furnish the full quota of Regular officers.

The Militia would require two more; the Yeomanry and Volunteers four or five. In fact, we may reasonably assume that it would take nine or ten colleges to supply the whole of the officers whose names appear in the Army List.

The construction of nine new Sandhursts cannot be called a cheap measure; but why create new schools? Why not make use of the existing educational system? The difficulty would be solved at once by transforming a number of our public schools into military colleges on the lines of West Point, where the best of military trainings goes hand in hand with a splendid civil education, and whose graduates are equally fitted to serve their country as officers or as private citizens.

Of all the lessons to be learnt from the War of Secession, the most obvious is that of the immense difference between raw levies led by civilians and men of an identical stamp led by old West Pointers.

Let our public schools approach the question in a public spirit, and it will soon be seen how well military training and intellectual education can run in double harness. The change would be one of names and appearances rather than of traditions or method. The duties of a house-master and a company commander, of assistant masters and subalterns, of prefects and non-commissioned officers are practically the same. Nor would there be any need to alter the general lines of the instruction now imparted. It would only be necessary to substitute for certain fusty forms of knowledge other aspects of the same subjects which, while possessing equal or higher value as mental gymnastics, would also be of practical use from a military point of view.

Let the dusty records of dead nations be replaced by the political and military history of modern times.

Let a knowledge of the Roman constitution of consuls and praetors, of plebes and equites be replaced by a knowledge of the constitutions of the British Empire, of Lords and Commons, of Crown Colonies and Houses of Representatives, of our political, commercial, and military organisations.

Let our somewhat flagging interest in the Wars of the Samnites and the petty squabbles of Greek villages be transferred to the wars of the eighteenth and nineteenth centuries, from which sprang modern Europe.

Let us forsake Aegospotami for Trafalgar, Marathon for Waterloo, the Metaurus for the Borodino. What can it profit to rake in the ashes of a remote past, when a new and more wonderful Salamis

has been enacted before our eyes? Let us cease to discuss *hastati principes* and *triarii*; the firing line, supports, and reserves are more worthy of our attention. Has there been no valour since Troy? The line of Minden, the terrible column of Fontenoy, the storm of Badajos, the fatal hill of Albuera will give a keener inspiration to the soldiers of to-morrow, as they are nearer and easier to realise. Every brave deed of ancient days can be matched with another in which our own flesh and blood took part, and while the doings of Horatius Cocles or Hannibal's pioneers before Saguntum must seem in the nature of a fairy tale to modern children, the story of Rorke's Drift or of the Cashmir Gate is a glimpse into that real life of the present which boys are always thirsting to explore.

One of the few subjects whose mastery never seems to have been a waste of time is drawing. This can lend us great aid in the making of officers. The eye for line and proportion which we now seek to develop by the copying of arabesques and acanthi, and the reproduction of ruined mills and châteaux, might be better trained by the processes of military topography, the traverse, the eye-sketch, the representation of hill features, and by the allied art of judging distance. There is no more valuable military asset than that "eye for country," which nothing teaches so well as the attempt to represent country on paper, and which lends a new significance to every walk we take. The scholastic method of teaching drawing is of no value except to the pupil; the military method would profit both the pupil and his mother country.

There is another branch of an officer's training which here calls for attention, and that is field engineering. This science is largely a matter of theory, which can be taught from books and from models. I may be prejudiced, but I should consider the construction of a frame bridge quite as useful a form of mental exercise as the intricacies of that other bridge called "asinorum." And the boy who would not cheerfully devote a few winter afternoons to the construction with light tools of trenches and traverses, of huts and block-houses, and who would not be delighted to apply his book-learned knowledge of bridging to "the real thing," must be a very unpleasant product of modern society, who has never felt the delights of playing at Robinson Crusoe or making castles in the sand.

If, in addition to these changes, half the endless summer afternoons now devoted to cricket were appropriated to tactical training and to musketry, much would be gained and nothing lost.

Under such a system, which would render immeasurable service to the State without acting to the detriment of the individual, and which would cost nothing to either, every boy who reached the fifth form at a public school would be equipped with the whole of the technical knowledge required for a thoroughly good non-commissioned officer or subaltern, for the ideal section leader of modern battle conditions. The practical knowledge, the habits of command and authority which come from long use, would not be developed to the same extent; but much might be done towards this desirable end by an extension of the existing monitorial system, and, in fact, by the militarisation of the whole school administration. At present a few of the elder boys are invested with ill-defined powers of supervision and discipline, frequently neglected and sometimes abused. It would be better for all concerned if each house were organised as a company and sub-divided into sections and squads commanded by boy sergeants

and corporals, who would be as directly responsible to their captain—the house-master—for the order and discipline of their commands as are the non-commissioned officers of the Regular Army.

Military considerations apart, this system would have an immense moral value from the purely scholastic standpoint. Through his subordinates the schoolmaster would acquire a hold on his boys, and a knowledge of them which he has never yet had. The boys themselves, instead of being permanently banded against authority as at present, would become keenly interested in its maintenance. What the school-boy dubs his "honour" would cease to be what the soldier calls "screening crime." Without a doubt the military system of devolved command is immeasurably superior to the scholastic plan of centralisation.

This contention will commend itself to any soldier who cares to reflect on the probable condition of the Army if non-commissioned officers were abolished and no intermediate authority left between the captain and his private soldiers.

I have dealt thus far with the question of military training in our public schools for two reasons. First, because the recruiting of officers is at once more important and more difficult than the recruiting of men; and, secondly, because there is no fundamental difficulty in the way of starting such a system of instruction as I have proposed. If the public utterances of the masters of our great schools are to be believed, they are fully convinced of the necessity for training the youth of the country to arms. Let them make good their words. The initiative is in their hands, and in those of the governors whom they represent.

There are certain schools which set the standard for the remainder. Any lead on their part is bound to be followed by the lesser-known schools, and also by the great mass of preparatory schools, from whom their pupils come. And if all the children of the upper classes were to receive a military training, the political leaders of the lower classes would be compelled to demand the extension of this privilege and obligation to themselves, for the very good reason that the monopoly of military knowledge is a power which no party could allow to their opponents. Primary military education in the National Schools is the natural correlative of military training in the secondary schools. It seems so simple as to amaze one by its non-existence. A little drill, a semi-military organisation such as that of the Boys' Brigade, miniature rifle practice for children over ten, a pride in the flag, and the honourable deeds which have been done in its shadow; these are all the means. The result would be an entire nation sufficiently trained in military matters to understand the gravity of war and to appreciate its difficulties, with an inexhaustible manhood ready at the first note of alarm to take their places in the Regular or Auxiliary Forces as existing and in any additional forces raised for the emergency.

With an entire nation trained to drill and shoot, with many thousands "capable of commanding a section under all circumstances," little would remain except to mobilise. Six weeks should be sufficient for such material to be brought into hard physical condition, to shake down into its place, and to acquire such small knowledge of tactics and field craft as the private soldier requires. Aided by the enthusiasm which the imminence of war provokes in all ranks, such

troops would be ready to take the field long before their transport and supply could be arranged.

So far from being irksome, such a course of military instruction at school would be a constant delight. Its expense to the State would be that of supplying card-board targets and Morris tube cartridges at five a penny, and a small initial outlay for the actual tubes and the miniature ranges—ten pounds, perhaps, to each school affected. In view of the recent re-armament of the cavalry, sufficient carbines should be available for use with the tubes and for musketry drill purposes.

If considered necessary for ordinary drill purposes, dummy rifles should not cost more than a shilling each. If, in addition to being neither costly nor irksome, it provided for the fullest possible expansion of our forces in case of war, it may also claim to be the best solution of an urgent national question.

There is one other point which I would urge, a trifling one, it may seem to those who count strength by guns and ships, but of the deepest importance in the eyes of those who place *morale* above every other consideration.

Our girls must share with our boys the benefits of military instruction; not, indeed, with a view to taking their place in the ranks, but to fit them for the even higher duty of rearing loyal and honourable citizens. At their mother's knees, and from their mother's lips, the sources of all right and noble inspiration which ever urged man upwards, must man learn the religion of soldiering, the meaning of those great ideals which are worded in trumpet deeds of honour, discipline, and self-sacrifice.

Granted a national sense of duty to the Motherland, and a knowledge of the elements of war, I see no occasion to discuss the details of the system under which these assets would be utilised. That is a matter which requires a knowledge of the working of our political, financial, and military machinery, to which no outsider can honestly lay claim. Compulsion would not be necessary, for of those who had once experienced the fascination of soldiering, a majority would avail themselves of the Auxiliary Forces to renew the associations in after years, while recruiting for the Regular forces would be stimulated by a better understanding and deep sympathy between the soldier and the civilian, who would come to realise that, in addition to being one of the noblest and most necessary of professions, soldiering is also one of the happiest and fullest of lives.

The higher education of officers for the Auxiliary Forces, and the ensurement of such a flow of properly-trained cadets, as to fill the regimental lists of the Regular Forces without depleting those of the Militia, are more difficult problems, which must be dealt with by more detailed measures, and which will be expensive in proportion to their importance.

At about the time when he reaches the upper fifth form, the proposed candidate for Woolwich or Sandhurst specialises by joining the Army Class which exists in almost all public schools. It is true that the instruction of those classes had little of a distinctively military character, being rather in the nature of a "cram" in the subject of general education, which compose the cadet's entrance examination.

We have, however, suggested that certain subjects, now used to obtain that state of mental receptivity known as a liberal education, should be replaced by others of equal value as mental gymnastics,

with the added merit of a present military use. The natural correlative of such a reform is, that the test of candidates, still following its purpose of ascertaining their degree of mental development, would be based on the subjects in which they had previously been instructed, that is to say, on subjects of a modern and quasi-military nature rather than of a classical and purely impractical character. In fact, the examination on leaving school would so closely resemble that now held on leaving cadet colleges, that officers might well be commissioned direct from school and begin to learn the applied duties of their profession, where they now commence to master its alphabet. The present system, under which the State has to teach the rudiments of their art to those whom it employs for military purposes, is as though the railway contractor had to teach his navvies the use of the spade, or the merchant to teach his book-keeper the four rules of arithmetic.

Our proposed system may then be considered to simplify the question of training officers for the Regular Forces. Given the prospect of direct entrance upon a career, which, though we should never desire it to become lucrative, must, of necessity, be so altered in its conditions as to afford a living wage to its followers, there should never be any scarcity of candidates for commissions in the standing Army.

It remains to be seen how far those who specialise for other professions, equally necessary to the welfare of the State, can be made available for the position of reserve officers, of subordinate officers in the Auxiliary Forces, or of officers in the extraordinary levies, which it might be necessary to raise in a grave national emergency.

Considering the rosy hues with which the human heart tinges all things seen in perspective, we may fairly assume that the great majority of those whose boyhood had been passed in quasi-military surroundings, would ask nothing better than to renew those associations by joining the Auxiliary Forces. The question of means, which now deters so many would-be soldiers, must be removed.

It is for the individual to give his person, and for the State to defray the cost, in the case of private and officer alike.

To those whom sentiment or inclination failed to move, a little judicious encouragement might be applied. For example, the granting of an university degree might be made to depend on having served with credit in the University Volunteer Corps, which, instead of occupying itself, as at present, with the A.B.C. of soldiering, should be rather in the nature of a modified Staff College or School of Instruction in "C and D" signalling, advanced musketry, and technical services generally. A leaving certificate from such a corps should be sufficient evidence of having kept terms, and should be accepted in lieu of any fees now charged for the degree, the amount thus lost to the university coffers being made good by the Government in the shape of a generous capitation grant on every student certified to have thus qualified himself for the position of officer.

Furthermore, a generous system of rewards and scholarships should be instituted by the State for those graduates who passed through their corps with "honours" in the shape of special military qualifications, so that poor students, who proved themselves of special utility to the State, might reckon on receiving a cheap education as well as those who now show themselves likely to do credit to their

colleges by superior classical attainments. Two hundred military scholarships of eighty pounds a year for three years would cost the State £48,000 yearly—about half the expense of maintaining a single regular battalion. And for this the State would acquire a reserve of highly-trained officers more than ample to meet any possible demands.

On these lines we should have provided for the almost indefinite expansion of our forces in time of war. A whole population trained in the rudiments of arms, many thousands qualified to act as non-commissioned officers, and many hundreds well prepared to assist the permanent cadres of officers in leading these masses up the steep ascent of duty and sacrifice, at whose summit stand the gates of victory.

V.

Having dealt at length with the question of expanding our forces in time of war, and of attracting our manhood to the Auxiliary Forces, it remains to provide for our current military needs in the shape of recruits for the standing Army.

Let us commence by dismissing the two methods which have been tried of recent years. These methods are first to raise the pay, which is already extravagant; and secondly, to lower the physical standard, which is already too lenient. They can only be regarded as temporary expedients of an unworthy nature.

As things stand, recruiting is the most difficult and most pressing of all our military problems. It is true that the number of candidates who present themselves each year is largely in excess of our requirements. It is equally true that nearly one-third of these are rejected for medical reasons, and that if all men obviously under eighteen years of age were refused, the rejections would amount to nearly two-thirds of the applications. In fact, our enlistments are only kept approximately abreast of our needs by varying the physical standard according to the state of the recruiting market.

Be it observed that the objection to men under eighteen is based on the medical dictum that no man should be sent to a tropical climate until the age of twenty. By accepting them we place ourselves in a dilemma, for to detain men at home who are enlisted for service abroad is an extravagance, while to send them abroad before they are fit to withstand the climate is unpleasantly like murder.

Nor is this the worst of the case. Its gravest indictment is, that our recruits are drawn from the lowest and least intelligent classes of the population. A large proportion of them enlist because they are too lazy or too stupid to make their way in civil life. Another section, the best, perhaps, join the colours because they have got into trouble and find it desirable to absent themselves for a few years from the vicinity of their homes. I do not imply that this trouble is usually of a criminal nature; it may be that the recruit has loved unwisely; that he has had high words with a powerful employer; or that he has in some venial way scandalised the narrow society of his particular church or chapel. It may only be that he has over-run his small weekly wage by some trifling act of extravagance, and finds it impossible to make ends meet again. The extent of his folly is immaterial; the point is, that he has shown himself of unsteady mental balance, of rather less than the average moral standard, and that

while the highest standards of conduct are exacted from the constable who guards the morals and hen-roosts of some obscure village, any wastrel is considered good enough to protect the honour of England, the lives of an army, and the prosperity of the British Empire.

No doubt many of these wastrels eventually become excellent soldiers. No doubt military discipline is the making of many such men. All that is beside the point. The army exists for a specific end, which is to train men as quickly and as economically as possible to defend their country, and to keep a certain number always ready for that purpose. High philanthropy is not in the province of the War Department.

The time needed to make an efficient soldier depends upon the quality of the raw material. *Ceteris paribus*, the more intelligent man will make the better soldier. And yet we continue to accept recruits of the lowest mental standard, knowing, at the same time, that in other things, in physique, in opportunities for training, in equipment, they are not on a level with the soldiers of the Continent. It seems a mathematical certainty that one-thousand British recruits of two years' service would be as hopelessly outclassed, outmarched, and outmanœuvred by a thousand two-year men of any Power which enforces universal service, as that they themselves would outmatch a thousand Militia of the same length of service.

What we want is to find some method of putting this to rights, which will enable the State to command the labour market, and to choose the men best suited for its purpose, instead of being fain to accept those whom other employers have refused.

How is this to be done? There can be no question of compulsion; the first condition of obligatory service is that it should fall on all alike, whereas the State requires comparatively few for its standing Army. Besides, garrison duty in an obscure and unhealthy tropical cantonment is a different matter from a course of military training at home.

A standing army in the true sense of the word must needs be a mercenary force. The armies of modern Europe are, more strictly speaking, Militias with a period of consecutive training lasting for one, two, or three years, while a standing army may be defined as a force whose members are enlisted not only to learn the art of war, but to remain with the colours after they have mastered their duties, for the purpose of rendering some specific military service. Every citizen may justly be required to render himself capable of defending his country in an emergency, but we cannot expect him to perform police duties year in and year out without adequate remuneration in coin or in kind.

If we compare our military institutions with those of France, we shall see that, although the proportions of the two forces are unequal, the British Regular Army is analogous to the *engagés volontaires* of the French Colonial Army, who enlist for five years; that is to say, for three years after the completion of their military training, with every encouragement to re-enlist for further periods of five years, while the National Army of France, whose soldiers join the colours for the unique purpose of receiving their military training and pass to the reserves on its completion, are more nearly related to our Militia and Volunteer forces.

In France, where the Standing Army bears a comparatively small proportion to the population and to the armed forces as a whole, recruits are attracted by the following means:—

1. By a system of "service pay," under which, after completing the period of colour service which every Frenchman owes to his country, the *engagé volontaire* receives a relatively high rate of pay, which, bearing in mind the lesser cost of living, was not unequal to that of the British soldier before the concessions of 1898 and 1902.
2. By a system of bounties payable on completing certain periods of service, and on signing on for further terms.
3. By the granting of modified pensions after no more than 15 years' service, and the *right* to certain minor posts in the civil services.

Recruiting for the *armée coloniale* is aided by the higher social status of the soldier in France and by the fact that a five years' engagement only implies three more years with the colours than every citizen is bound to give. It is impeded by the smallness of the floating population, caused by the prosperity of agricultural France, and the system of divided inheritance which disinclines the children of property holders to seek a fortune outside their own villages, and by the deep aversion of all Frenchmen to leaving their native soil for any length of time.

Every Frenchman is not unreasonably persuaded that France is the best of all countries to live in, and is therefore incapable of resigning himself to a prolonged residence abroad.

This feeling necessitates an elaborate system of reliefs, on the principle that the soldier is entitled to serve for a year in France after every three years' service abroad, and even with the aid of subsidised lines, such as the Messageries Maritimes, must entail great expense.

In spite of the advantage gained by the power of appointment to the civil service, and in spite of the comparatively small force required, France has never quite solved the problem of recruiting for service abroad, and has to eke out her forces with the *Légion Étrangère*.

Our own recruiting problem is rendered more difficult by the greater size at which our Standing Army must be maintained, and by the fact that it has to furnish certain necessary garrisons at home, and to provide the mobile force under whose cover we expect to mobilise our Auxiliaries against invasion. The maintenance of a Regular force at home, coupled with the command of the sea, further enables us to keep our foreign garrisons at a lower strength than would otherwise be the case. If we stood to lose command of the sea, the garrison of every Colony would need to be sufficient in itself to deal with any possible emergencies; as it is, we can hold a smaller force in reserve in England ready for despatch to any centre of disturbance.

Recruiting in England is also gravely hindered by the contempt for soldiers and soldiering which exists among so large a section of our lower and middle classes. Two hundred years of recruiting from the gutter have established a feeling that the soldier is a degraded creature, and his profession to be avoided by all respectable folk. There is a story current in barracks which illustrates this standpoint. A Dissenting minister was holding forth on the awful example set by

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a backsliding member of his flock. "Yes, my dear brethren," he exclaimed, "think how this poor young man fell from grace. He began by staying away from chapel. Then he took to playing cards. Then he took to drink; and then, my dear brethren, and *then* he enlisted for a soldier!"

Perhaps the most serious of all impediments is that want of co-operation between the various Departments of State, and even between different branches of the same Departments, which is a regrettable feature of English public life, and which at present precludes our offering an inducement so cheap to the State and so priceless to the soldier, as the certainty of employment on the expiration of his colour service.

On the other hand, we are aided by the existence of a large town population, bound to the land or to their present occupations by no other tie than the necessity of earning their bread. If the opportunity be offered, such people will always change their occupation to "better themselves," as their phrase has it.

It is a further assistance that our population has, as a whole, no sentimental objection to going abroad. It is safe to assert that for every man who is deterred from enlisting by the prospect of foreign service, three better men join the Service for the sole object of seeing the world.

None the less, it is plain that our existing system and inducements fail to assure a continuous supply of suitable men. The flow of recruits varies from year to year, the conditions of service have varied even more often; but attempts to couple these variations as cause and effect are not convincing. In the opinion of many experienced officers, the average recruit never thinks at all at the time of his enlistment; he is too young to understand the exact value of money or the meaning of time; a shilling or seventeen pence, three years or nine are vague terms which trouble him little. Either he is hungry, in trouble, or in search of adventure; in no humour, at any rate, to weigh the pros and cons of his undertaking, even if he were clever enough to do so, while the recruiting harpy, thirsty for his half-crown of head-money, takes care he shall not understand too much. But this source of supply is taxed to its utmost; if it is to be increased or improved, we must tap another stratum of more responsible men, and to these we must prove that the uniform is neither the soldier man's disgrace nor the ruin of his after life.

The main attraction we now offer is a high initial rate of pay, increased on the soldier's reaching a certain standard of efficiency by the grant of messing allowance, and on his extension of service by service pay.

The actual figures do but scant justice to the generosity with which the soldier is paid. From the day of his enlistment the infantryman clears about four and sixpence a week, which means that after buying a necessary addition to his rations in the shape of supper—price threepence at the regimental coffee bar—he has over two shillings a week for tobacco and amusements. After a few months he receives another fivepence a day. After two years he can earn another sixpence a day, which brings the amount at his absolute disposal to about nine shillings a week, which there is nothing but his own extravagant habits to prevent his putting in the bank.

What is more, a little zeal and intelligence will bring promotion within the first year of his service, and the almost immediate enjoyment of about eleven shillings a week.

How many civilians, starting at eighteen with no capital or qualifications other than health or good will, can expect to be as well off by their twenty-first year? Not many, I think.

Perhaps this high pay and the prospect of seeing the world are the sum total of the attractions we offer. The uniform, in spite of its transient effect on the hearts of the other sex, is a drawback rather than a source of pride to the soldier, and will remain so until the Army comes to hold an altogether different place in the public esteem. The usually light day's work and the security of tenure are rather more than counterbalanced, in the opinion of the men themselves, by the perpetual sense of restraint, the endless waiting about, and the surrender of individuality entailed by the gregarious life of barracks. Above all there is the feeling that unless the soldier has proved himself of essentially higher ability than his comrades, the future holds nothing for him but a return to civil life, heavily handicapped by having given three or more of his best years to the National Service.

What else can we offer?

A further increase of pay is out of the question. Every farthing that can be saved from the drain of current expenses is needed for such pressing purposes as the replacement of obsolete *matériel*, the provision of training appliances, and the better housing of all ranks.

The least considered person in the British Army—the regimental commissioned officer—must be given a living wage. Then, perhaps, there will be spare millions to increase the already exorbitant pay of the private soldier.

A further relaxation of the bonds of discipline is absolutely inadmissible. A voluntary Army, where the recruits have to be coaxed and pampered to make them enlist at all, which is governed under an Army Act of extraordinary leniency, hedged about with safeguards that impede the prompt execution of justice, is the very last force to make light of such moral aids as the punctilious rendering of salutes, the irreproachable turnout in uniform, the keeping of early and regular hours, and such tests of steadiness as close-order drill and guard duties.

Better messing is higher pay under another guise, and only means that the soldier will be provided through the mess-book with what he now buys at the coffee bar. And experiment has proved that the amenities of the table have a very doubtful attraction for the recruit-giving classes.

There is one and only one practical solution to the question, and that the simplest and cheapest, and the most readily attained of all. No new principle is involved; it is nothing but the realisation of a pious wish, a counsel of perfection which men of every party have admitted to be desirable, but which none have had the courage or perseverance to carry out.

The solution is this: That service in the armed forces of the Crown must be made either a career in itself or the stepping-stone to a career; that to have served in the Army must become a help and not a hindrance in the struggle to live.

To a few men the Army affords a career even now. In every regiment and battalion there is a quartermaster who has risen from

the rank of private to a position of comparative ease, with a pension which, although it does not err on the side of generosity, is sufficient to assure his future. But quartermasters are few and their tenure of office long. Taking it at ten years, it means that only one recruit in two or three thousand can ever obtain an honorary commission, and a hasty word of a momentary dereliction of duty are often sufficient to annul the efforts of a dozen years.

There are many minor posts to which the well-conducted soldier may aspire as a non-commissioned officer; but such positions of comparatively brief tenure and entailing retirement at the age of about forty on a pension quite inadequate to support a family cannot be said to constitute a career. The pensioned colour-sergeant, for example, must seek employment to eke out his means, and that we do not hear more often of ex-sergeants in precarious circumstances is a high tribute to their value.

The better class of working man is quite shrewd enough to see:—

1. That a man who is good enough to become a colour-sergeant can find a better market for his abilities in civil life; and
2. That the chances of becoming a quartermaster are too small to balance the risks of failure.

If we are ever to get this better class to the colours we must convince them that every decent man joining the Service will be assured of continuous employment as good as that which the like abilities would command in civil life. Assuming that a continuous military career cannot be found for every recruit, he must at least be guaranteed that on quitting the colours he will be able to assume that place in the world which he would have held had he avoided the Service of the Crown. As long as the man who enlists at the age of eighteen knows that he will presently be turned adrift with three, seven, or nine years absolutely to the bad, so long will the industrious and intelligent decline to become soldiers.

It is a clear case of Protection. The State must protect its military employes from what are now the consequences of their enlistment in the same way that it protects its other employes, in the post office, for example, of whose trades the Government holds a monopoly, and whose acquirements have consequently no value in the open market.

In the case of the post office, this protection is afforded by security from dismissal except in the case of misconduct, and an adequate pension graduated according to length of service and the position held on retirement. As soon as the post office servant comes "on the establishment" he is assured of his daily bread to the day of his death, and so highly is this security of tenure valued by the working classes, that there is never any lack of candidates at a relatively low wage.

There are certain difficulties in the way of securing continuous employment to soldiers which do not apply to less arduous careers. The first and greatest of these is that the period of a man's utility as a soldier, of his capacity for hard physical work, is not concurrent with the term of his natural life. Speaking roughly of the better class recruit, from whom our non-commissioned officers are made, the soldier is from three to five years in the making. He is at his best from the

fourth to the twelfth year of his service. During the next ten years he is still good to go, but has passed his physical prime, and loses in activity and endurance what he gains in judgment and experience. From the age of about forty he is going down hill; he is no longer capable of hard physical work, and rarely capable of receiving new impressions or adapting himself to changed circumstances. At forty-five he is past all outdoor work, and at fifty he ceases to give value for his wages in any shape.

Although the course of evolution and devolution is similar in all cases, the length of the periods varies considerably in different classes of men. In the upper classes the period of development is longer, and that of decay comes later than above enunciated, owing, no doubt, to more favourable conditions of life in childhood, to a later commencement of life's serious work, and better opportunities of periodical recuperation. For converse reasons the prime of the lowest classes is very much shorter. The worst stamp of recruit, like the members of less civilised races, is an old man at thirty and past all work at forty.

Whatever the precise length of the period of utility, no one will deny that the soldier is past work as such at a comparatively early age, and that this must be seriously taken into account in any scheme for his continuous employment.

The age limit for civil servants is sixty-five. The number who reach this age is relatively small, and the number who live to enjoy their pension for ten years very limited. But the soldier must be otherwise provided for at far too early an age for any system of pensions, however sweeping, to meet his case. That he must receive assistance is certain; but in return he must be required to render such services as lie within his abilities.

As we have said above, the soldier is three or four years in making. It is true that Continental nations are adopting two years' service, and that foreign Line officers express confidence in their ability to train men in that time. But we must never forget in our eagerness for efficiency that our Service is a voluntary one, and that our recruits cannot be worked at the almost brutal pressure maintained abroad. What our recruits are willing to undergo acts as a perpetual safety-valve to what we can require of them. The conscript's military training is merely an interruption of his normal career, and, so far as it is in human nature to like work, he welcomes any change which makes it possible for him to have done the sooner with a necessary but not always pleasant duty. With the Volunteer it is not so. If he knows that soldiering is harder work than civil life he will not enlist. His instruction must therefore be conducted more gently, and, even assuming adjustment of system to prevent loss of time between the date of enlistment and the opening of the next training season, three years for the making of an infantryman and four years for the cavalry and technical services are very moderate estimates.

At the end of these three or four years two courses are open. The first is to transfer the made soldier to the reserve, ready to rejoin the colours at need; but even after only four years' service the reservist is by so much at a disadvantage to those who have never left civil life.

The second course is to retain the made soldier in the Service. It is from men so retained that our foreign garrisons, the Field Army

in India, and the small Field Army at home which is to cover the mobilisation of Auxiliaries, must be found. So far, so good; in the case of the 100,000 or more men thus employed, the difficulty is avoided for a few years. It then returns with greater force. If it is not easy to take up one's old life after three years, it is very difficult after seven, and practically impossible after twelve. And until things are so changed that to have served as a soldier is not equivalent to having wrecked one's whole life, men of sense will decline to remain in the service, if they have ever been foolish enough to join it. If we are to obtain the men we want we must be able to say: "So far from your military service being your ruin, we undertake that you shall be provided with employment according to your abilities and deserts, so long as you are capable of working; at the end of that time you shall receive a sufficient pension to assure the comfort of your old age."

How is this end to be attained? By the enactment of a law that no man shall be appointed to the staff of any department under the Imperial Government, nor to any force of county or borough police unless he shall have served for at least three years in the Regular Army or Navy, except on the written certificate of an official to be appointed by the Secretary for War and the First Lord of the Admiralty that no candidates are forthcoming from either branch of His Majesty's armed forces.

When one realises that in our larger towns the post office employes are numbered literally by the thousand, it will be admitted that this department alone could find employment for almost all our time-expired soldiers and sailors.

The ideal to be aimed at is that of a Consolidated Public Service, employment in any of whose departments would count towards a public pension. A special office, composed of representatives from all the labour employing departments, should be formed to deal with the distribution of the men, and to form regulations for their transfer from the military to the civil branches, according to the needs of the moment.

The reorganisation of our Auxiliary Forces on the basis of universal training, and their assumption of their proper duty of Imperial defence, leaving to the Standing Army the duty of Imperial police, would diminish the need for a large reserve to the Regular Army, while the increased flow of recruits which we hope to ensure would automatically abolish the system of using up the reserve to complete units to war strength, and save it for its proper duty of replacing casualties. In these circumstances the period of reserve service might be substantially lessened, so that mobilisation, touching only the newer and less skilled hands in the other departments, need not disorganise the machinery of civil government.

There are certain positions, such, for example, as that of policemen, for which men of mature age and judgment are peculiarly fitted. These posts should be reserved for non-commissioned officers on completion of twelve or fifteen years' service, while many more of this deserving class would find employment on the augmented cadres of our reformed Auxiliary Forces. Posts of "unskilled responsibility," such as those of hall-porters, caretakers, and commissionaires, should account for the remainder of long-service men, and more especially for those incapacitated by wounds or climatic diseases from hard physical work.

All pensions, except in the case of disabled men, should take the form of old-age pensions, commencing at fifty, or even later. Thus, instead of a sergeant receiving two shillings a day on completing twenty-one years' service at the age, perhaps, of less than forty, he should receive a living pension of three or more shillings a day on reaching the age of fifty.

There is a difficulty, and that a serious one, in the face of applying the panacea of a consolidated public service to the men of the foreign garrisons. Unless the charges for transport are to be excessive, these men must be retained abroad for at least five years. The larger part of them are of necessity quartered in enervating climates where, during much of the year, only an hour or two of the early morning can be devoted to military exercises. In the absence of other employment the natural and fatal consequence is, that these men rapidly become accustomed to doing nothing all day, and that then, having acquired habits of indolence, a susceptibility to cold, and, in all probability, to intermittent ague, they return to England less capable of earning a living than anyone else. These are the men of all others whom the Government must protect from the consequences of services rendered to their country.

That a guarantee of subsequent Government employment will produce men enough to face the risks and discomforts of foreign service, is not in doubt. The prospect of five years' travel, followed by an assured career, is an alluring one.

It is the State which we have to protect against the influx into its civil services of men, who, through no fault of their own, have become indisposed and unfitted for steady hard work, such as every employer has a right to expect.

Now it is obvious to those who are acquainted with soldiers that the lower ranks abroad deteriorate with a rapidity out of all proportion to the effect which a similar sojourn has upon their officers. The cause of this is not to be sought in less favourable conditions of life, for the officer in the pursuit of sport exposes himself to climatic conditions in a way which is impossible and forbidden to the men. It is rather to be found in the fact that the officer takes care to fill his days with a gentle flow of mental and bodily exercise, in which he has the means and opportunity to indulge. It is the better class recruit who feels to the full the torture of idle days, when he is constrained to sit alone on his bed-cot eating his heart out with vain desires and vainer regrets. Both to promote his peace of mind and to prevent his acquiring idle habits, something more must be done to fill those days than the promoters of temperance associations and regimental recreation rooms have the power to accomplish.

This end can be achieved, at a relatively small outlay, in a way which should offer the highest of incentives to the active and ambitious man we want as a recruit. That way is to invert the system which we have proposed for the Auxiliary Forces. In the one case we are to go to the schools for our soldiers; in the other, let us come to the army for our schooling. Let us make our foreign army the secondary school and university of the poor man, of those whose opportunities of education have been scanty in earlier life. Let us say to the recruit: "If you enlist for service abroad you shall not only be assured of employment on your return to England, but, if you care to work during your service, you shall be enabled to qualify for far higher and better paid work than you could now obtain. In a word,

if you want to better yourself in life, you shall receive all the instruction and all the help of which you care to avail yourself in exchange for a few years of service in the Standing Army.'

To this end every corps composed wholly, or in part, of men liable to foreign service, should contain or be associated with a secondary and technical school.

On completion of his military education, that is to say, at or before the end of three years' service, the soldier would have the option of joining this school and attending any one or more of its courses of instruction between nine and five o'clock on four or five days a week. The schools would be closed for three months, during the summer in temperate climates, and during the cold weather in tropical stations. During this period the men would be available for field training and manœuvres; during the remainder of the year they would be available for parades, for firing range practices, and for other forms of instruction which do not require more than a couple of consecutive hours before breakfast in the mornings, and on one or two days in the week when the schools ought to be shut—say Wednesdays and Saturdays.

It is to be remembered that fatigues are practically non-existent and employments rare in stations abroad. The menial duties which absorb so much time and energy at home are performed by natives who act as servants, grooms, waiters, cooks, pioneers, and orderly men, who often clean the men's boots, bring them their morning tea, and shave them before they are awake. Guard duties are light nowadays, and would be lighter still if more wholesome occupation gave the men fewer opportunities of drifting into trouble; it would be no hardship and would not materially interfere with our scheme if companies were detailed by roster to furnish all duties for a week, and exempted from school for that period.

It would be very difficult for any one person to detail a suitable course of instruction for such training schools. The soldier's knowledge of educational technicalities is necessarily limited; the civilian's acquaintance with the shortcomings and possibilities of the soldier much more so; while the question of finance dominates and regulates both. But if a small committee were appointed to consider the whole question, the following outline of subjects might be worthy of investigation:—

1. A commercial course, of book-keeping, long-hand and short-hand writing, English composition and one European language. The language of the country, its history, customs, and geography, should be taught as a military study.
2. A course of handicrafts, in which freehand and mechanical drawing, working in wood, metal, and leather, printing, bookbinding, and other similar arts might find a place.
3. A general or recreative course of such subjects as modern history, geography, and English literature, which, if devoid of purely commercial value, none the less afford an infinite amount of happiness to their students and develop tastes easier of gratification and more beneficial to the national future than a fine palate for beer or a certain skill at cribbage and banco which now form the sum-total of the soldier's learning off parade.

Let it be admitted that this is an Utopian scheme, incapable of full and immediate realisation. The main attraction for some years to come must be the certainty of continuous employment for all well-conducted men who desire it. But the educational project contains the greater possibilities of the two proposals, not only from a military but from a national standpoint. It would not be hard to start on a small scale with one or two battalions; although the fetters of habit and custom hang heavily upon the majority of men, it would be a sorry confession to admit that there are no officers into whose soul the iron has not entered, who could inaugurate and forward such a scheme, aided, of course, in educational matters by a proportion of civilian experts. But one thing must never be forgotten: the first condition of its success is the thorough systematisation of the soldier's military instruction, in order that he may be fully trained to arms before being allowed to divert any of his energies to lay purposes.

An able soldier, on whom fell the soldier's usual task of making something out of nothing, who improvised three hundred thousand soldiers and held Paris, not without honour, for four months, against the greatest army of modern times—General Trochu—when taking part in the Parliamentary debates on the reconstruction of the French Army, made this remark: That the first condition of short service must be "the substitution in our regiments of a military education for the monotonous and purely technical breaking in (dressage) which has made the French soldier ever since the French Army existed." Such an "education," which, in the original French, implies not only a progressive military training, but also an inculcation of the military ideals and spirit, is provided for to a great extent in our latest manuals. Perhaps the habits and prejudices engendered by long years of indifference and mismanagement have not yet disappeared.

But the bad old ways are vanishing apace. When an intelligent public interest in the army has been aroused, and military service has ceased to be the ruin of the soldier's after life, our national forces will also cease to be what they have been in the past, a refuge for the stupid, the improvident and the destitute, and a calling most wisely shunned by the industrious and ambitious of every class.

The national safety and the national honour alike demand that our defences should be placed on a sound footing, and that our most vital interests should no longer be entrusted to the most worthless part of our population.

I have tried to indicate what appears the least onerous way of fulfilling these obligations. If these means fail we must still remember that no sacrifice of leisure, life, or money, can be too great for the security of our Empire, and the peace and progress which that Empire ensures.

SECOND PRIZE SPECIAL MILITARY ESSAY,
1905.

Subject:—

"THE BEST, LEAST IRKSOME, AND LEAST COSTLY METHOD OF SECURING THE MALE ABLE-BODIED YOUTH OF THIS COUNTRY FOR SERVICE IN THE REGULAR OR AUXILIARY FORCES AS EXISTING, AND FOR EXPANDING THOSE FORCES IN TIME OF WAR."

By Colonel F. N. MAUDE, C.B., 1st Hampshire R.E. (V).

Motto:

"Der Gute ist des Besten Feind."

"Der Soldat muss sich's können fühlen und wer's nicht nobel und edel treibt Lieber weit von dem Handwerk er bleibt."—Wallenstein's Lager. Schiller.

"War," as Clausewitz has told us, "is an incident of human intercourse, neither moral or immoral in itself, but analogous to business competition, which, in fact, it greatly resembles."¹

In these words he has embodied the whole results of a quarter of a century's experience of the new factor in "human intercourse," introduced by the rise of the principle of nationalities into the balance of European Powers.

This new factor had its birth in the French Revolution—itself the consequence of the abuse of the dynastic principle which it displaced—and its growth involved every nation, except England (she escaping by reason of her geographical position), in a struggle that brought home to every family, almost to every man, woman, and child, on the Continent that elementary instinct of self-preservation common to all gregarious races of the animal kingdom,² viz., that the good of the community comes before the happiness of the individual, and that no one has a right to such protection as the community can afford who is not both fit and ready to exact from any national enemy the highest possible price for his continued personal existence. It is

¹ Clausewitz's "vom Kriege," 1st Book, 1st Chapter.

² See Prince Krapotkin's most interesting work, "Mutual Help in the Animal Kingdom."

not enough to be willing to die for one's country—the essence is, that men should submit to be trained in such wise that the enemy will not dream of even attempting to create the occasion which may demand from each man this ultimate sacrifice.

Prussia having suffered most, was the first to push this principle to its logical conclusion, and the victories of Königgrätz and Sedan have since compelled all other Continental nations to follow her example, with the result that each now stands armed to the teeth and ready to spring upon its neighbour, literally at a few hours' notice.¹ The consequence has been that the peace of Western Europe has not been disturbed for the last thirty-five years, and the Germans have piled up wealth in a manner for which history finds no parallel, and this, in spite of the burden of personal service and indirect taxation, under which they all declare themselves to be suffering.

The accumulation of wealth is to the nation what the growth of muscular energy is to the individual, hence it is reasonably certain that however little they may like the conditions under which they are compelled to live out their lives, these conditions nevertheless are well adapted to their environment, and, seeing this, there are not wanting many in this country who are asking whether we too had not better imitate the example of our rivals?

Now, if Clausewitz had lived a century later, it is probable that he would have expressed his definition quoted above in Darwinian peculiarly liable to distortion in controversy, especially by those who survival of the fittest,² transferred to the national plane"—the "fittest" being again "that organisation best adapted to its own environment," and this last word, "environment," brings us to the root of the whole matter, and if we follow it up will lead us to a scientific solution of our whole problem of national organisation for defence.

I use the word "defence" not without misgiving, as it is peculiarly liable to distortion in controversy especially by those who have not been trained to exactitude in their choice of military phraseology. For me, the "offensive" is the only form of action which technically holds out any prospect of nationally successful defence; but the word "defence" is the only one which defines our actual political position with the necessary degree of accuracy for my purpose, because our national object is to keep what we already have, and since the issues of a military struggle are proverbially uncertain, we have everything to gain and nothing to lose by a maintenance of the *status quo*. This, being granted, forms the basis on which our whole fighting organisation must be built up. If our

¹ By the indiscretion of a German Staff Officer, I became acquainted with the German orders in case of war with France in 1886. The whole of the Western Corps were to take the field as they stood—without waiting for Reserves. The French 5th and 6th Corps were brought forward to equal readiness two years later. This is the explanation of the Kaiser's frequent "Alarm" parades—all limbers, wagons, etc., form up completely packed for action.

² As Huxley long since pointed out, "fittest" is not synonymous with "best"—a point the disputants over the survival of our slum population in the *Morning Post*, in August, generally have ignored.

fleet and armies fail to inspire our enemies with sufficient respect to induce them to keep the peace unbroken, they have failed us in their most essential purpose, for nothing we may make out of successful war can compensate us for its inevitable cost.

Herein lies the first and principal point of difference between our position and that of our rivals. They have everything to gain—Colonies, fleets, money, and markets—from successful hostilities, and their desire for these determines, from the very outset, the nature of their preparations against us. Since in point of wealth and recuperative power, comparing Empire with Empire, we can afford—indeed, by our circumstances, are compelled—to play a waiting game, they are equally driven to bring their utmost possible force against us from the very first moment when it becomes obvious that hostilities are inevitable.

Fortunately for us this effort is limited by our insular condition, and this brings us to the second main point in which our respective environments differ.

Given two nations facing one another across an imaginary line of frontier, either may attack the other (theoretically at least, though in practice theory suffers very considerable limitations) with every available man, horse, and gun at the shortest notice. Hence each is compelled to keep its forces on such a footing, and at such a degree of efficiency, as will ensure almost instantaneous action; each therefore is obliged to seek to gain in peace some shortening of time in mobilisation, or of concentration without technically complete mobilisation, sufficient to give it an advantage over its rival. Thence arises the need for incessant labour in all their mobilisation departments with whatever section of the frontier each one may happen to be especially concerned, whether this may be towards the land or sea. (In France, the north-eastern section being the most important, places in this section are most coveted. Hence a man in a coast section is induced to work his hardest to secure promotion.)

For a land Power, therefore, the whole question of organisation is narrowed down to the finding of places for, and the training of every available man to, instant readiness for the field. This, however, clashes directly with the necessity the whole nation feels to secure the best possible conditions of existence for each of its ultimate particles. Therefore in practice a working compromise has to be reached which, whilst giving this indispensable minimum of training, ensures for the whole a maximum working efficiency which will procure the attainment of a sufficient standard of comfort for the units of the whole race. Now, in practice a three years' period has been found an economically possible solution¹ of this very difficult problem. With

¹ The matter works out economically as follows :—The training both of body and character that men receive in the ranks gives them greatly increased physical energy and power of concentration, together with a better expectation of life. Hence they not only remain available as wealth producers for a longer period but do more efficient work throughout the whole time. Taking the average yearly wage in Germany at £50 a year, then since the average value of a finished article is about three times the value of the labour put into it, and assuming that the increased expectation of life due to the military training averages five years—a figure which most

a longer time men's interest in the acquisition of knowledge is deadened—drills cease to be instructional and become mere routine, and with less, if the required standard is to be kept up, the men have to be so ruthlessly driven that discontent, which is carried into private life, is the inevitable consequence—a fact that the Germans are beginning to find out.¹

This is only an approximation. Mulhall's estimate² of the total wealth of Germany works out somewhat lower; but it must be remembered that according to economists she has been suffering heavy losses from her protective tariff, which would diminish my total.

In any case I submit that we have here a case well deserving detailed investigation by our statisticians.

This solution, however, viz., 3 to 2 years' colour service, though it has been forced on all Continental nations by the inexorable logic of facts, contains one disadvantage, viz., that the outbreak of war automatically removes the whole able-bodied population from reproductive labour, and hence all material recuperation of strength during war is rendered, if not impossible, most exceedingly difficult—hence land Powers must stand or fall by their previously accumulated energy, which, other factors being equal, means their credit, which again will depend on the extent and degree of their initial successes; hence a further cause for straining every nerve to gain at the outset a shattering success.³

authorities consulted in Germany by the writer agree upon as reasonable—then, thanks to this training, there are always about half a million Germans alive and earning wealth for the nation who without such training would have been dead, and this would give the annual increment of wealth to their country of $\text{£}150 \times 500,000 = \text{£}75,000,000$ sterling. There is further the increment on the work done by each individual throughout his normal existence, which we may put at $\text{£}10$ a year, or for 5,000,000 workers, $\text{£}50,000,000$ a year. That is to say, that during the century that has elapsed since universal service was introduced, allowing for the growth of the population from about 20,000,000 to near 60,000,000 (giving about 2,000,000 and 6,000,000 trained men respectively—a mean therefore of 4,000,000), there should have been an increase of national wealth, in round numbers, of about 100,000,000 a year—in all, of 10,000,000,000—which would agree fairly closely with the facts, for whereas German credit in 1806 stood at *nil*, nowadays it is equal to our own, though her rate of taxation is higher than ours, and her nominal wealth stands at about 8,000,000,000, against our 17,000,000,000.*

*See Sir R. Giffen's address at Brit. Assoc., Southport, September, 1902. I am compelled to quote from memory, and thus cannot give the page.

¹ The real reason for the reduction of service to two years in Germany was, not to supply greater numbers, but to strike at the root of Socialism. Old soldiers rarely join the red flag except to secure better labour conditions; but the result has disappointed expectation. (From information supplied to me in Berlin, 1893.)

² See latest edition of his Dictionary of Statistics.

³ This again alters the whole nature of the original strategy at the opening of a campaign, for it eliminates the possibility of employing a "retaining" force—a point Moltke appreciated in 1866 and 1870, but which his French commentators have failed to appreciate.

From this disadvantage we, by our insular position, are relatively free. War may, and undoubtedly will, come upon us as a bolt from the blue; the conditions of existence in foreign nations compel them to rely upon surprise.¹ But the degree of initial effort we must put forward to repel surprise can be determined within limits quite unattainable as between two nations separated only by a land frontier.

Practically the whole question can be narrowed down to this single issue: How many vessels capable of transporting troops across from 25 to 100 miles of sea can be concentrated along our enemy's coasts, in their harbours, estuaries and so forth, on any chosen day of the year, by orders which can be kept secret until the very moment preceding complete execution?

Taking the charts and maps of all neighbouring frontiers, it is evident that, even pressing into the service fishing boats, canal and river steamers, etc., the tonnage must be strictly limited, for though theoretically it would be possible to arrange by sealed orders for every ocean-going vessel in their Mercantile Marine to rendezvous at predetermined points along, say, the French coast-line from Dunkirk to Cherbourg, yet the sudden influx of these vessels from all quarters into the Channel would create conditions which could hardly fail to disclose their purpose to the many trained eyes on board our own cross-Channel services, whose running could not be interfered with, if the surprise was to be complete, until the very last moment possible, for it needs only warning enough to enable our destroyers to get to sea to ensure the failure of any such design.

The resources of transport are thus reduced to the number of vessels at all times within immediate call of points along the coast line, including in the total sailing vessels and lighters capable of being towed through a moderate sea at not less than six knots an hour, and crowding all these vessels to the utmost extent compatible with a ten-hour voyage in smooth water. It does not appear to me possible that more than 120,000 men, their artillery, cavalry, and transport reduced to the minimum necessary for this particular service, could by any possibility be conveyed across the Channel in such a manner as would ensure a sufficient degree of surprise to give reasonable prospect of success to a raid having London for its primary objective.

Space and time alike fail me to go into the chances for and against the ultimate success of such a surprise.² It will, I think, be sufficient

¹ See note to p. 30.

² During the last ten years the historical section of the French General Staff have gone back completely to the Napoleonic School, and recognise that under special conditions, "mobility" may far outweigh "cohesion" in the larger units.

Cavalry takes up much room on board ship, and would be of little use in England, but a special force made up of all the Chasseur battalions in France, capable, like the Bersaglieri, of marching 5 miles an hour, and 7 on occasion, could easily be railed to the coast without attracting attention. There are 30 of these battalions in France, which, at 500 men each, gives 15,000—a very efficient substitute for cavalry divisions. The cyclist companies should also not be neglected. Taking the "dislocation" map of the French Army, it will be seen that the task of despatching by road and rail 120,000 men to places along the Channel coast would nowadays be a very simple matter, and could easily be accomplished in 24 hours. How

to point out that for an equal, indeed for a lesser, stake there have been Continental leaders of all nations who have actually accepted even greater risks in the past,¹ and therefore we may reasonably count on the existence of others in the future; hence the cardinal principle of all our organisation must be the insurance, under whatever form of service we may adopt, of the presence of a sufficient body of troops in this kingdom ready, as in India, to move at a moment's notice, and so distributed in their peace quarters that they could be concentrated for decisive battle on the shortest line between London and the sea in sufficient time to defeat any such effort of sheer numerical superiority.

It is conceivably possible that such concentration is sufficiently provided for by our present regulations for mobilisation. Whether this is or is not the case, as an exoteric observer I can express no opinion, but the indications all point against this supposition, and I am at least convinced that, calculating out the time required for such a movement by the *data* in use in all Continental Staff Bureaux, no foreign general would hesitate to incur the risk, and since the whole question of invasion depends not on *what we know*, but on *what the enemy thinks*, I suggest that the very first practical step of Army Reform should consist in the redistribution of our available forces in such manner as to insure under all circumstances that the enemy would incur the certainty of a battle against heavy numerical odds, no matter when or where he might attempt a landing. I believe that such redistribution could be carried out, not only with great benefit to the troops concerned but actually with a profit² to the departments most directly involved.

Such a redistribution of our existing forces would undoubtedly do much to diminish the temptation to attack and end all by a paralysing blow at the heart of our Empire which at present exists; but we must be living in a fool's paradise indeed if we imagine that safety against a raid will suffice to maintain peace in the face of the growing dangers by which the Empire is threatened.

easily such movements escape notice is shown by the recent concentration of six corps for action against Germany at the height of the Morocco crisis, and again by the concentration of eight corps, four for manœuvres, four in position of readiness during the present month (September) on the eastern frontier. The former has never been realised by the English Press at all; the essential part of the latter seems also to have escaped observation. We have been told of the concentration of four corps for manœuvres, but not of the movement of the other four held in readiness.

¹ Jourdan's passage of the Rhine, 1794. Austrians held all boats on river, and Jourdan compelled to bring boats from Holland by canals. His communications actually were cut by fire-ships, but without result on his operations. Napoleon's passage of the Danube at Lobau—Austrians cut his bridges by drifters. Napoleon's descent on Egypt. Prussian passage of the Alsen Sound, 1864, in open boats—the Danish ironclad "Rolf Krake" failed to prevent the passage. Russian passage of the Danube, 1877, though Turkish gun-boats still held the river.

² By the sale of W.D. land we have developed, and purchase of fresh sites near Ashdown Forest. We paid £7 an acre for Aldershot, and it is now worth, say, £50—Ashdown Forest possibly worth £25.

These dangers arise simply from the action of the law of growth inherent in all living organisms, which applies to the highest type of all, the nation, as to the lowest entity of the vegetable kingdom which struggles for existence against its surroundings. Germany, Russia, and Great Britain can no more prevent the consequence of their own inherent vitality than the trees in the forest can hinder the results of their growth. Each must acquire the food it needs for the nutrition of its ultimate particles, which food, in the case of nations, is measured in terms of trade and money, and each ultimate particle of each organism requires a different quality of nutrition, which with rival nations is expressed by the relative standard of comfort each believes to be indispensable.

For the past thirty years a condition of relatively stable equilibrium has obtained throughout the Continent of Europe, during which the nations have been storing potential energy; but this equilibrium has been completely upset by the collapse of Russia in the Far East, and forces are about to be released in Europe which must evolve a struggle for readjustment of the balance of power which will be analogous in its main features with all those which have preceded it, and though fundamentally the result will depend on the possession of the command of the sea, the final issue will be decided on land, precisely as happened in the beginning of the century,¹ for ultimately the forces at work remain the same as they were then.

Excluding the United States from our argument, the most highly vitalised white race at the present moment is apparently Germany, whose millions, rapidly outgrowing the supporting power of her soil, are compelled to "seek their place in the sun"—the Kaiser's phrase in a recent speech—as others have done before them, and sea power is the first essential of their success in doing so. In this she traverses our path directly, and since her geographical position places her at an enormous disadvantage as against us, she is compelled to seek wider access to the open sea, by extension of her sphere of influence.

The literature of the "Pan-Germanic" School² foreshadows the lines of action she must adopt, and her recent conduct with regard to the Morocco question and the control of the Baltic indicates the steps we may reasonably expect her to take.

Freed from the menace of "The War on Two Fronts," which has so long restricted her activity, she now appears to be determined to compel France, as France under Napoleon once compelled her, to become her obedient ally³ on the one hand, whilst on the other she seeks by peaceful penetration to close the Baltic against us and to secure all the advantages of harbour accommodation and mineral resources the littoral of Norway and Sweden along the North Sea and Atlantic can afford her, and until we dispose of an Army capable of giving the same support to our possible allies which we were able to give a century ago, there is absolutely nothing to prevent the slow but certain realisation of her desires.⁴

¹ Trafalgar and Waterloo.

² See especially a very remarkable book, "Pan-Germanism," published early this year, but anonymous. The author knows his subject, and has collected a mass of most valuable information.

³ In 1812. Since writing this, Prince Henkel von Donnersmark is reported to have used this identical threat in Paris.

⁴ Written before the "Baltic cruise" incident.

Moreover, events may hasten their accomplishment very materially, for Russia, like France after her Revolution, will be driven by the internal forces at work within the Empire to renewed exertions to seek a warm water port, and her only direction of free expansion must bring her into collision with our interests in the East.

If her diplomacy can precipitate this event, the road lies open before Germany, for, in German opinion at least, our fleet alone cannot inflict upon her punishment at all commensurate with the advantages she may hope to derive, for though her Mercantile Marine would undoubtedly have to be laid up during the continuance of hostilities, ours would largely pass under the protection of the Stars and Stripes, and with the advantages she would secure by the possession of the Norwegian sea-going population she could easily enter into commercial competition with the highly paid labour on the other side of the Atlantic for the carrying trade of the ocean.

The two portions of this design need not be carried out simultaneously, nor need invasion of our islands form an integral portion of the plan, for in view of the pessimistic utterances of our own Press and literature, Germans may be pardoned if they doubt our power of resistance to the internal troubles war would at once create in the present state of our organisation for defence, and I think I may safely add, that if we were now at the eleventh hour to adopt their own institution of compulsory military service, which they are so constantly advising us to do, this would be the last step needed to deliver us over tied and bound to their mercy. This assertion may appear to many to be strained, but I will proceed to justify it fully, for, under the conditions supposed, viz., war with Russia in the East, what would be the immediate consequence which a declaration of hostilities by Germany and France against us—or even Germany alone—would inevitably entail?

Setting aside all question of the possible traps into which our fleet might be led, by entry into the Baltic,¹ for example, it is evident that our commercial credit would be very severely strained by the efforts to maintain an adequate force, say a quarter of a million men, only in the East; now add to this a naval war at our very doors, carefully organised in advance to cause us the maximum inconvenience possible.

It is quite conceivable that if our people, through the medium of the Press, the Volunteers, and all other agencies, had been systematically trained by our Intelligence Department to understand what things are possible and what impossible in modern war, we might accept the addition of Germany alone to the list of our foes with equanimity; but as matters stand, our adversaries may be excused if they believe that commercial panic would be the first and immediate consequence of such action on their part.

Commercial panic means the shrinkage of values, shrinkage of values the curtailment of credit, and with the loss of credit would go almost half of all our industries; in fact, nearly all whose existence is independent of Government orders for war stores of all descriptions. Simultaneously would follow a jump in the price of raw materials² and food, and from one-third to one-half of our working classes would

¹ Written before the recent Baltic cruise.

² See evidence of Marine Insurance firms in Royal Commission on Food Supply.

be thrown out of employment and rendered dependent on the rates and charity; but there would be no money for the former and still less for the latter. In the absence of charity even the present "Unemployed" Bill would fall flat, and our starving multitudes would come on the rates, house-holders could no longer pay, and evictions would become the order of the day, with the result that leaders¹ would be found for the masses and an outcry for surrender raised which it would be almost impossible for our politicians to resist in view of the apparently very favourable terms our enemies could afford to offer us.

This is the picture as it appears, and must appear, to the Continental mind nourished on our newspaper articles and confirmed by the object-lesson of Paris and the Commune, which neither French nor Germans have ever forgotten. And now note how it would be aggravated by recourse to their favourite nostrum, viz., compulsory service.

Any law of compulsion that could possibly find acceptance with Anglo-Saxon races must be at least as universal as in Germany. Hence, even if war with Russia only had not compelled us to mobilise our whole Army, the addition of yet another enemy undoubtedly would do so, for even if the danger of invasion were known to the initiates to be remote, popular panic would compel mobilisation, and expert opinion would have to bow, not merely because nowadays it always must, but because some relief for the congested labour market would have to be supplied. But this mobilisation could make no distinction of persons, and simultaneously all our physically finest and best men would be swept into the net, quite regardless of the positions they occupied, leaving our already crippled industries to struggle along as best they might with such assistance as they could get from the residue of the population. This result is inevitable, for if universal training not only ensures that the physically fittest should enter the Army, but then trains and develops this fitness yet further, these perfected types must drive their weaker untrained competitors to the wall, and as a consequence will be found filling all the most responsible positions in our commercial undertakings.

This being precisely what has happened in Germany, it is improbable that the point should have escaped German observation.

Now though in this manner we could undoubtedly fill the ranks of our Army, should we at the same time create the spirit animating all ranks which alone makes an Army formidable in the field? I doubt it, and for the following reasons: At the present moment we could only hope to pass a species of Swiss Militia Bill (with service in the ranks not exceeding 1 year—a period which, though sufficient to confer the glint of peace-time polish, is altogether inadequate for the growth of the deeper soldierly virtues of self-sacrifice and endurance) by dint of much persuasion, by a very insignificant majority, which, with the swing of the pendulum inevitable in all such cases, would presently change into a considerable majority; it is therefore safe to assume that at least one-half of our recruits would bring no goodwill to their new life, and though many would adapt themselves to the change in their environment, a considerable number—say 30 per cent.

¹ The upper-middle strata of the commercial classes, accustomed to organise and control labour, might, when ruined, become very dangerous leaders.

—would remain recalcitrant to the end of the chapter. Have our supporters of the compulsory service idea ever endeavoured to formulate in their own minds what difficulties such recalcitrancy would entail in the maintenance of discipline?

All commanding officers know what trouble even half a dozen malcontents can occasion in a regiment; how the bonds of discipline for the whole have to be drawn together to curb their excesses, and how political pressure is constantly being exerted to hinder the C.O.'s in their endeavour to maintain efficiency. If this is the case even now, with perhaps only 2 per cent. of defaulters, who find considerable difficulty in securing Parliamentary influence to support their complaints, how would it be if their numbers were swollen to, say, 30 per cent., with the whole of the Opposition, whichever party was in power, ready and willing to make political capital out of all their grievances? The consequence must be one of two things: Either discipline would be supported and its bonds drawn so tight as to render the Service altogether too irksome, as in France, where penal battalions and firing¹ parties barely suffice to maintain it at a reasonable level, or life must be made so easy that the training would become a farce, and in either case reserve men when called upon would rejoin with a sense of disquietude and justifiable grievance, and officers would go into action with the conviction that they could not rely on their men to follow them.

The art of war, Moltke has told us, "consists in the practical adaptation of the means at hand to the attainment of the object in view"; but speaking to his own people, who always have a uniform material at their disposal, he omitted to point out the enormous range of variation of which the human material—the heart and soul of the matter in war—is actually capable, and it is on this point that civilian Army Reformers invariably come to grief.

To the soldier is simply a human being in a certain prescribed dress—how he came into it is a matter of no importance—who will obey the law as reasonable beings habitually do under normal conditions. They forget entirely that it is the soldier's duty to obey under circumstances to which no reasonable being in peace is ever subjected; when the fear of death and mutilation—far worse than the things themselves—is being vividly driven in upon his mind by every shower of lashing bullets, and only the inborn heroism and developed will-power of the mass can keep the units in their places. The difficulty of all military organisation lies in the development of this will-power, which is discipline, and it is greater or less almost in precise proportion to the good-will and intelligence each individual recruit brings with him to the colours, which again depends on whether he comes willingly or under compulsion.

I am of course aware of the taunts of "conscripts of hunger" and "mercenaries," so freely lavished on our soldiers by the gutter Press of our own and most foreign countries, and I am even prepared to concede that many are compelled into the Service by these two causes; but the proportion is far fewer than is generally believed, for the ranks of the "unemployable," at least as numerous as the whole Regular Army with the colours put together, are always open also,

¹ Between 1885 and 1892 the average number of death sentences by courts-martial was 56, most of which appear to have been carried out. (See files of *La France Militaire*.)

and a man must have some spark of soldierly instinct in him somewhere who prefers to accept the immediate restraints of a soldier's life to the freedom always open to him as a "corner loafer." It is a matter of common knowledge to the police and all charitable organisations that none of these loafers of an age to bear arms has ever been found dead of starvation, and their hardships of sleeping out at nights and occasional want of sufficient food are small indeed compared to what both officers and soldiers, frequently for weeks and months at a stretch, have to endure on active service.¹

Granted, however, that many, even 50 per cent., do enlist under the pressure of want, they come into a body by dribblets only, and the good-will of the majority soon brings out and develops the spark of patriotism that dwells in all our hearts, except indeed in the basest, who are soon rejected by the regiment, and go back to the ignominy from whence they may have sprung; this is the life history of some two-thirds of our deserters.

Neither of these taunts, however, apply to the Volunteers, who receive nothing (not even ridicule nowadays) for their services, and who therefore develop in the short period of their exercises an *esprit de corps* which the professional soldiers of all nations² who have studied them admit to be of the most extraordinary value as a guarantee of their efficiency when permanently enrolled.

Nor are the numbers of trained men turned out by our existing system so contemptible as it is the fashion of the moment to represent them. Neither soldiers, sailors, nor men of the Auxiliary Forces lose the whole of their value as fighting men the day after the legal term of their engagement ceases; on the contrary, they carry their better physique, due to selection and training, into civil life, and with the exception of the invalids, victims of our foreign and Colonial conditions of service, remain robust and healthy for at least as long as their Continental comrades in the Landwehr or Armée Territoriale in Germany or France.

In the attached diagrams I have endeavoured to show graphically our totals of trained and partially trained men calculated to the same conditions of service as prevail in Germany. By the German law, a man becomes liable to military service after his 17th birthday, and may be called out until the completion of his 45th year; but normally he serves from his 21st to his 45th birthday, viz., 2 years with the colours and the remainder in the different categories of Reserve and Landwehr. Applying similar terms of service to our own case, it will be seen from Diagram I. that since no fewer than 827,000 have joined the Regular Army since 1875, there should have been, allowing for wastage by death calculated by the ordinary life tables in use in insurance offices, and deducting a further 2 per cent. for death in action and foreign service health risks, an ample allow-

¹ Note in diagram how, though the price of food and proportion of paupers have both fallen, the percentage of recruits to population has steadily increased. Note also in Diagram I. how the number of men over 5 feet 6 inches enlisted has also increased.

² Opinions gathered personally by the writer, especially amongst German officers. Even in 1877, when the Volunteers were far below their present standard, the discipline they still retained after the close of a long Brighton review was considered extraordinary by men who had fought all through 1866 and 1870.

ance, the very respectable figure of 744,000 still alive and quite as capable of performing military duty as their comrades of equal age in Germany, for the German death-rate is slightly higher, the percentage of crime somewhat greater, and judging by such comparisons as I have been able to make between their Landwehr battalions and our men of similar length of service, *i.e.*, the Royal Reserve Regiments called out in 1900, their men become unfitted for active service at an earlier age than ours.

Actually a War Office return, dated 30th July, 1898, gives 569,758 reservists and ex-soldiers (exclusive of deserters) estimated to exist in the country at the date of the return, and adding to these 203,000 men at the time in the ranks, we get a total of 772,758 trained men in the British Isles alone.

This, however, includes all ages, and must be very much below the mark, for adding on another 15 contingents, *i.e.*, going back to 1860, we find that an additional 250,000 have joined the Service, of which, with a 50 per cent. death-rate for the period (*i.e.*, from 45 to 60 years of age), 125,000 should still be alive.

The difference is probably to be accounted for by desertions and emigrations to the Colonies. Making all reasonable allowances, therefore, I think it safe to assume that in 1900 we actually had of trained soldiers of the Regular Army under 45 years of age in round numbers three-quarters of a million men, and of men between 45 and 50 still fit to do duty in garrison, assist as instructors of Volunteers, etc., about another 125,000, or a grand total of 857,000 men, of which, including the Royal Reserve Regiments, about 400,000 were actually under arms.

I have been unable to obtain exact figures of the recruiting for the Militia and Yeomanry during the same periods; but since the two forces have kept up an average strength of about 120,000, and the average term of service appears from later figures to be about 4 years, the annual contingent for the whole period may be fairly taken at 30,000, which, estimated on the same basis as above, gives 675,000 under 45 and 225,000 between 45 and 60, or a total of 900,000 men. (See Diagram III.)

The Volunteers, with a mean annual contingent of 45,000 men, and taking still the same death-rate, *viz.*, 10 per cent., to allow for the less rigorous medical inspection, give us 810,000 men under 45 and 360,000 between 45 and 60, a total of 1,170,000; and adding the whole of these totals together we find that, exclusive of the Royal Navy, there must be of men under 45 years of age more or less trained to arms no fewer than 2,235,000, backed by another 710,000 men fitted, as Continental experience during the Napoleonic Wars¹ abundantly showed, to do good service in the field in case of extreme emergency, giving a grand total of 2,945,000 men as the reservoir of more or less trained men upon which we can draw in time of uttermost peril. (See Diagram III.)

This is what the existing system has given us in the past, and is a sufficiently striking figure; but it would have been greatly exceeded

¹Except for civilian critics, it need hardly be added that neither in France, Germany, Austria, nor Russia was the medical inspection for *chair à canon* up to our existing standard during the campaign of 1813-14-15. Nor was it in our own Service.

in the next generation had we adhered to the terms and conditions of service in existence up to 1900, and with which all classes had become familiar.

It will be seen from the diagram No. 1 that our average number of recruits for the Regular Army during the five years, from 1898 to 1902, was, in round figures, 50,000 out of an annual contingent of 380,000 (see Report of Norfolk Commission). In 1940 the annual contingent will be 520,000, and the same ratio of enlistment being maintained we should be taking at a very low computation not less than 70,000 men a year, *i.e.*, the average contingent for 25 years, from 1915 to 1940, will be roughly 65,000 men a year, giving a total of 1,625,000, less 10 per cent. for deaths, etc., or 1,462,500 Regular soldiers, under 45, and for 1900 to 1915, fifteen times 62,500, less 50 per cent., or 418,195, say, 400,000 men between the ages of 45 and 60—a total of 1,880,000 men, with seven years' training with the colours.

In like manner the Militia and Yeomanry, with an average of 50,000 recruits per annum, at present will give a similar sum, and the Volunteers starting with 60,000, and increasing with the population, should give one-fifth more, or 1,180,000 under 45, and 502,000 over 45 and under 60—in all, say, 2,300,000 men.

Our grand total of more or less trained men in 1940 should, therefore, be, in round figures, 4,800,000 under 45, and 1,300,000 between 45 and 60—in all, 6,100,000 men, and these figures will be about a minimum, because, since at least one-half of all our recruits join under twenty, a correspondingly longer time must elapse before they reach the limit of 60 years of age.¹

Unfortunately, I have not been able to procure similar information for the Navy, nor is it practicable to foretell the rate at which the demand for crews for our war-ships is likely to increase, but working on the same lines, and allowing for the fact that the Navy recruits boys almost exclusively, we shall not be far wrong in assuming that in 1900 there were no less than 400,000 blue-jackets somewhere in the country, and that in 1940 there will be about half-a-million. Adding these figures we find that our final total of men

¹ Our possible enemies enrol their men in their 21st year, thus lose relatively to us fully a whole year's contingent.

As regards the fighting value of men under 20 in great emergencies, see a remarkable article in the February No. of "Scribner," 1905, compiled from U.S.A. official figures. It is there shown that at least 20 per cent. of the Army of the Potomac were under 20 years of age, many being mustered out in 1864 under that age who had fought all through the war. Their death and invaliding rates seem to have been normal, but their courage admirable. In the Southern Army, boys of 16 by hundreds fought in the ranks.

As a point of interest, I may add that the Inspector-General of the Army of the Potomac, *à propos* of the question of town-bred *versus* country-bred soldiers, told me that before the conclusion of their war it became absolutely certain from the returns that the townsmen stood hardship and exposure much better than the apparently splendid men from Kentucky and the plains. This was so contrary to preconceived opinion that the figures were tested again and again always with the same result. As fighting men, the townsmen had far more cohesion in an assault—less individuality as skirmishers.

trained for war in 1900 was but little short of $3\frac{1}{4}$ millions, out of an industrial population of males, over 17, estimated at 10,000,000, and in 1940, would have been,¹ say, $6\frac{1}{2}$ millions out of 12 millions—not a bad result for a purely voluntary organisation to attain, seeing that it is slightly in excess of what the German law of conscription would give us on an equal basis of population.

In the limits of my available space it is impossible to discuss in detail the many projects of Army Reform before the public at the present moment; all, however, aim at a reduction in the annual demand for the Regular Army, and none aim higher than a 200,000 contingent trained for one year as a general service army. Taking the numbers required for the Regular Forces at 25,000 only, and remembering that the Navy nowadays requires at least 15,000, we should, at the present moment, need no less than 240,000 out of a total contingent of 385,000 men, and since neither Germany nor France, both with a lower standard of height than our own (5 feet 2 inches and 5 feet $0\frac{1}{2}$ inches respectively), are able to find this proportion of men fit for the service out of their annual contingent, it seems very improbable that we should obtain better results either.

We are told, it is true, that with compulsory service we should obtain a better standard of physique for our recruits, but the statement seems to be based on measurements of the Anthropometric Committee of the British Association, which appear to me open to serious question.

According to a report presented by this Committee in 1883, our national standard of height at the age of 19 should be 5 feet 7·29 inches. As the average height of our Regular recruits during that year was only 5 feet 5·4 inches, it follows that our men are 2 inches shorter than they should be. But will this deduction bear investigation?

From Diagram 1 it appears that no fewer than 84,000 men came before the doctor for the Regular Army in 1900; and for all services—Navy, Army, Militia, and Yeomanry—not less than 250,000 appeared. Now, though actual figures are not available, it is a matter of common knowledge to those who make it their business to study our recruiting, that the Navy and Army get the nick of the recruits first, neither those of the Militia nor of the Volunteers being equally satisfactory. Hence, if the average of the Army—we will include the Navy—is only 5 feet 5·4 inches, that of the other Services must be somewhat less. Let us deduct the 4 inches and take 5 feet 5 inches as our standard. Then, since there are 250,000 men out of 380,000, averaging 5 feet 5 inches, to bring up the average of the whole to 5 feet 7 inches, the height of the remainder must be roughly 5 feet 10 inches; but from this remainder must be deducted not only the permanent contingent of cripples, dwarfs, etc., but also those would-be young soldiers who are rejected by the thousand before they ever reach the doctor's hands. How many these may be it is impossible to state with accuracy; in Manchester and other great manufacturing towns, it often runs as high as 9 out of 10, and though some of the men come up again and again, few are of the type that either could or would tramp to neighbouring centres, and many will only serve in the regiment of their

¹ I say "would have been," because owing to the constant breaches in continuity of the conditions of service during the past five years, the curves of numbers become too irregular for exact prediction.

choice, so that it is fair to assume that a good 50,000 more are rejected, and at least one-half of them on account of deficient height.¹ Hence, if the conclusions of the Anthropometric Committee are correct, our annual contingent of civilian youths of 19 must be well over 5 feet 10 inches, and the evidence of my eyes absolutely precludes the possibility of admitting that any such type exists in the country.

Assuming, however, that this estimate of the British Association is correct, would it be worth while to introduce the element of ill-will into the Army merely for the sake of securing one in four of this race of young giants, and thus raising the standard of height by about 1'1 inch? The truth is, that the soundest hearts, lungs, and teeth are not always found in the outwardly most favourable-looking bodies, and with men as in other matters, a fine exterior not unfrequently veils a most unsatisfactory state of things behind it.

For the sake of argument, I will, however, grant the contention of the advocates of compulsory service that their method would give us the physical pick of the nation, which at present we fail to attract, but would that, in itself, be desirable from the standpoint of the nation, as opposed to that of the Army. Here German experience steps in to guide us. They undoubtedly do obtain the physical pick of their people, but the result is, that these physically picked men, developed and perfected, as I have pointed out above,² on their return to civil life, crush their weaker comrades to the wall in the individual struggle for survival, and this is the true origin of the progress socialism is making in that country, which is sapping the loyalty, and hence the fighting value, of their whole organisation for war, and is admittedly the most serious danger which German Statesmen are compelled to face. Our method, on the other hand, even if we admit that it floods the Army with undesirable wastrels to the amount of 50 per cent., trains and develops these wastrels to become useful members of society hereafter, whilst, at the same time, our external power of expansion is not fettered by any restriction placed on the colonising instinct of the race, as it would be if our fittest had all to be retained in the country for defensive purposes.

Unfortunately, no adequate statistical inquiry into the influence of our military training on the wealth-producing capacity of our soldiers has ever been undertaken, and the only evidence I have been able to discover is given in the War Office return already quoted (p.40,) which shows that in 1897, out of the whole industrial population over 20 years of age (excluding soldiers and ex-soldiers), estimated at 8,120,025, one in 37 was in receipt of relief against one in 170 of reservists and discharged soldiers (with or without pensions), estimated at 567,758.

Make what reduction in reason that one may in these figures, and the result is still sufficiently surprising when one considers the type from which so many of our recruits undoubtedly are drawn, and the

¹ Incidentally, the point is worth bringing out, for if the former number be added to those men whose applications to serve we are in a position to trace, it appears that not fewer than three out of four of the available males in the country, at one time or another, endeavour to wear His Majesty's uniform—in other words, that a far larger proportion of the population is willing to serve than compulsion could ever afford to accept.

² See note p. 32.

lower and more numerous one assumes this type to be, the stronger becomes the evidence in favour of the economic value of training, such as it was, we formerly gave to our men.¹

Take the pick of the population and subject them to the improved system of training which has been developed since about 1890, and what would become the fate of the residue if even now the pick are shown to get decidedly the worst of it in the struggle for existence.

Medical inspection is far from being an exact science, and pitiful though the appearance of many of our recruits may appear to be, it is at least open to question whether physically they are as inferior as they seem to the outward eye, for after all the will power of each is still subjected to a test that many fail to stand before they are settled down in their new vocation.

Each has to overcome obstacles of all sorts, prejudices of relatives, conditions of existence repugnant to many in his passage from civil life to the status of a soldier, and it may well be that this spark of persistence in effort and concentration of will brought out and developed subsequently by the whole course of his training is a better asset to the nation, both in his military and subsequent civil occupation, than an extra few pounds in weight or an inch or two in height or chest measurement. After all, it is "will power," not primarily physique, that carries all before it on the battle-field.

Eliminating this will power again for argument's sake, would a compulsory service Army, raised by an annual contingent of 200,000 men, and backed by a Regular force of 200,000 long-service men, with only a small reserve, fight better than the Army we could at present raise?

* Apply these conditions to the recent struggle in South Africa, and let us see. Our old system gave us in 1900 a Regular Army of no less than 375,000 men in round numbers, with 24,000 men still left in the reserve, and 25,000 Royal Reserve men (the finest battalions perhaps ever seen), not to speak of Militia and Volunteers to the aggregate number of 300,000 more behind them.²

Under the proposed scheme the Regular Army of long-service men could not have found more than about 125,000 men for South Africa, and the General Service Army would have been called on to supply no fewer than 325,000 for the front alone, not counting the 200,000 which we must regard as the minimum which would have to be left at home. But would these general service battalions, with an average of only one year's training, have been equal on the veldt to the Regular battalions, squadrons, and batteries we actually sent to the front? Would they have been better, in fact, than the Militia who, if inferior in average length of service, had a far higher proportion of older and more responsible men to stiffen their ranks? Opinions may perhaps differ.

Perhaps a 100,000 men contingent and two years' service would do better, but seeing that not even the Norfolk Commission contemplated more than a four years' liability to service and fixed the

¹ Working out the saving to the nation due to this diminution of work-house population, we find that without the Army we should have at least 12,000 more paupers to support, which, at £30 a head, means £360,000 a year, as a set-off against the estimates.

² See Diagram No. II.

strength of the total force at 385,000, in either case we should have been unable to meet the numerical demand without having recourse to voluntary enlistment from the classes who had already discharged their liability to the State beforehand. Would they have come forward with equal alacrity to that displayed by the present Volunteers under these circumstances?

If the comparison is unfavourable even under this comparatively small strain upon the nation, it becomes even worse under the conditions of the great war I am contemplating, when perhaps 500,000 men in the East, 1,000,000 in Europe, and another 1,000,000 for home defence may be a minimum demand.

Let us admit for the moment that in either case, men whose liability for service has expired will come forward with equal readiness. Then, instead of a nucleus of nearly 1,000,000 seven-year men with which to stiffen the new battalions, there will be materially under 100,000, and instead of having the existing cadres of the Regular Army, Militia, Yeomanry, and Volunteers, all with more or less long-standing traditions and associations, available for expansion, there will only be the dépôts of the three former, *i.e.*, 300 fewer battalions to fill up than at present, and it is certainly open to question whether entirely new formations of men with one, or at most two years' original training, would possess equal fighting value to those units already pre-existing and expanded by the pick of the Militia and Volunteers, stiffened as above suggested by from 20 to 25 per cent. of men between 35 and 45 years of age, and with seven years' service in all climates behind them.

It is difficult to make this point sufficiently clear owing to the absence of information as to what our reformers propose to do with existing dépôts and cadres; but under any arrangement of units I have been able to suggest to myself as compatible with economy and the principles of proposed reforms, it appears to me that the troops we could under existing conditions *grow* out of our present organisation, would have a considerably higher fighting potential than we could *create* by any other arrangement which may be instituted. Thus the pick of an existing Volunteer or Militia regiment, taken at 600 men and made up with 200 ex-reserve men and 200 young soldiers from the dépôt, would, I think, be superior to a battalion of men who had only done one year, or at most two, in the ranks under conditions of compulsory service, for the units actually under arms on the outbreak of hostilities would average far too young, whilst those between thirty and forty years of age would have been far too long out of touch with the Service to fall readily into military habits again—habits with which the Volunteer or Militiaman has never broken, and which a seven-year man, of course, can never shake off.

If to meet this difficulty we extend the liability of service to the 45th year as abroad and compel the men to come up from time to time for periods of training, we not only paralyse all industries on the outbreak of war, as pointed out above, but introduce what is felt in all Continental countries as by far the most galling part of the compulsory service yoke, *viz.*, the feeling of insecurity that surrounds every man's working life as to his future. The risk of war may be, and generally is, readily accepted, but the possibility of having one's whole personal prospects dashed by a sudden and apparently arbitrary order to come up for training proves in practice by far the most harassing load for men to bear.

This I know from personal observation and inquiry, both in France and Germany, and the mere fact that practically all proposals before us, consider an annual or at least biennial recall to the colours of the reservists as essential, convinces me of the superficiality with which all reformers have studied the subject.

"Dans la guerre le moral est pour les trois quarts, le reste est peu de chose," said Napoleon, and if the saying held good a century ago, when it was possible to launch men to an attack in dense, heavy masses, fourteen battalions deployed one behind the other, with lancers in the rear to encourage the laggards,¹ how much more must it be true to-day, particularly in this country, where, under fire, the soldier is left almost to his own devices. Yet in all these discussions we have left out of sight the essence of the whole matter, viz.: Will compulsory service troops fight as well as volunteers?

The glamour of German successes and the extraordinary collapse of public interest in military questions which occurred a few years after the campaign of 1870 have led us to answer this vital question in the affirmative, but I submit that we have done so on altogether insufficient evidence, for revelations supplied by the subsequent works of General Meckel (the instructor of the Japanese Army) and of Captain Hoenig, both written to remind the younger generation who had joined since the war how imperative close-order discipline still remains, must suffice to dispel any doubts on the matter whatever.

The mere fact that around German mess tables and in their military writings, such a word as "Massendruckergerthum" could ever gain currency indicates the extent of their trouble, and since the word has no equivalent in English, hence is not to be found in any dictionary. I subjoin the following quotation² to indicate what it really means:—

"I recalled my first battle in France. We did not arrive in the field till late in the day, and crossed it where the fight had been fiercest. The field was literally strewn with men who had left the ranks and who were doing nothing. Whole battalions could have been formed from them, we could count hundreds, some were lying down, their rifles pointing to the front as if they were still in the fighting line; others had squatted like hares in the furrows; wherever a bush or ditch gave shelter there were men to be seen who, in some cases, had made themselves very comfortable. All these men gazed at us without showing the least interest. I heard them say: 'These fellows, like the others, are going to let themselves get shot.'

"During our advance, and before we came under any serious fire, we saw six men, one behind another, in a long queue covering behind a tree; afterwards, the sight grew so familiar I became accustomed to it—who did not?"

The excuse that this was the consequence of the appalling effect of the fire of the breech-loaders, will not hold water nowadays, when it has long since been made evident by the analysis of the statistics of losses made independently in Germany, France, Austria, and England, that on no occasion were these losses, in regard to the duration of the

¹ Note Macdonald's Corps at Wagram.

² "Midsummer's Night Dream," well-known to have been written by Meckel. See also Hoenig's "48 Hours of Moltke's Strategy," and his "Combats in the Quarries of Point du Jour and Rozerieulles."

time of infliction, in any way remarkable. So far from this being the case, they were relatively far smaller than those endured by war-seasoned troops of all countries in the days of the muzzle-loader, and to find a parallel one must go back to the early years of the French Revolution before Napoleon's genius had found out a way to employ them in such ruthless fashion that it became physically impossible for the weaker to stay behind.¹

In America, from 1862 to 1864, the experience also was all in favour of the Volunteer, for it was not until the "Draft Act" was put in force in the North that "skulking" became a serious evil.² In South Africa the whole psychology of the case was so different that a direct comparison is out of the question. The extraordinary disparity in the mobility of the opposing sides compelled our men to fight under most disadvantageous conditions, and the instinct which leads men to show white flags when visibly surrounded is a totally different one from that which induces them to stay behind in a victorious rush.

The paragraph from Meckel I have quoted above, was well known to very many British officers during the nineties, and they used their eyes to detect anything of the kind, both in Tirah and Africa. I have communicated with many, and all have assured me that they at least saw nothing of the same kind, but remain convinced that had it been possible to deprive the Boers of their superior mobility, by the capture of their ponies for example, our attacks would have got home with the bayonet just as they did actually at Talana Hill, Elandslaagte, Belmont, Enslin, and Pieter's Hill, and when they failed it was entirely and always due to the want of the impulse of successive "Treffen" which German, French, and Austrian writers³ have always indicated as the only road to victory, and which view has been so completely substantiated by recent Japanese practice.

Summing up the whole question, it appears to me from the detailed study of the evidence of the past hundred and fifty years, that conscript armies never have fought well except when, over and above the

¹ In the early battles of the French Revolution the percentage of loss per hour rarely rose as high as 1 per cent., having fallen from 6 and 7 in the Seven Years' War; under Napoleon again it rose to 4 and 5. (See "Geist und Stoff in Modernen Kriege," by C. von B.K. Vienna. Published about 1893).

² See "The Volcano under the City," a book published about 1892, in New York, for information as to the effect of the Draft Act. Also Wilkinson's "Life in the Ranks of the Army of the Potomac" (New York, about 1893). This last book is particularly valuable, as it is the only one with which I am acquainted which shows the readiness of Volunteers with a sufficiently obvious stake before them to submit to the sternest discipline.

Since the men could not be flogged, they invented field punishments of most cruel descriptions, such as crucifying a man on a spare gun wheel by lashing him to the felloes—St. Andrew fashion. Straining him over the forage racks of G.S. wagons, etc. Revolvers also were freely used on parade, to secure immediate obedience. All this was a spontaneous revolt against the laxity of discipline in the early stages of the war. Personal enquiry has confirmed the reliability of his evidence.

³ See also comments by Fournier-Langlois, and the German Official account of the Boer War.

compulsion of the law, there has also been the compulsion of hunger,¹ hardship, and distress for them, and those behind them, to drive them forward. Thus, as long as the terror lasted in France, men, though conscripts in name, were Volunteers in fact, for even when they did desert on the march, as they frequently did in wholesale fashion, they generally rejoined of their own accord a few weeks later, but when affairs at home became more settled, and the Emperor's "method of making war," i.e., without magazines and practically without provision columns, brought home to the soldier on the wintry wastes of Poland that life, even in poverty in his own village, was far preferable to the chance of glory with the certainty of hunger and misery in the field, the quality of his armies fell off, recruits became "refractaires," and it needed flying columns over 35,000 men in the aggregate to bring them to the colours.

But hunger and misery behind us is precisely what we shall have in the coming struggle, and the essence of the whole question seems to me to lie in this: that our Government, whilst taking measures to minimise the possibilities of serious troubles arising from bread riots, can, at their will, and from time to time, arrange for precisely that amount of pressure which will compel men to go to the front with the determination to shorten the nation's sufferings, i.e., to sacrifice their lives for the sake of those they leave behind them.

It is this adjustment of "pressure to the load," to use an engineering simile, which our existing organisation supplies, which is all important to our ultimate success.

Compulsory service would generate a head of steam, which would blow our recuperative machinery to pieces, for the valves it supplies, as above pointed out, are not big enough to relieve the excess of pressure with sufficient rapidity.

Let us consider in a little more detail what must inevitably happen, assuming for the moment, say, a five years' liability for active service only. Under existing conditions the two to three million men thrown out of work would automatically flock to the Volunteer centres primarily, for these (304 battalion head-quarters, and, perhaps, double that number of company centres) are distributed all over the country, in greatest density where most required, and are familiar to everyone. They would not go to the Regular *Dépôts* or Militia in the first instance, for the conditions of service would appear to them too onerous, and few would have imagination enough to realise the duration of the struggle before them; but once there, the logic of events would induce them to stay until their prospects appeared to improve outside. The prospect, however, would not improve all at once, and when and as they realised what we were in for, they would volunteer for service in the Regular Army (the only one which would be allowed to go to the front) in thousands. If, under the depression produced by the "Black Week" in December, 1899—which did not, as a fact, even ripple the pool of industrial employment, 80,000 men came

¹ See letter of the Major-General to Soult, in October, 1805, when Soult complained that his men were starving. "Colin's Campaign, 1805," published 1902.

² See "Les Refractaires" in supplement to *Militär-Wochenblatt*, 1887.

forward,¹ 800,000 and thrice that number would respond when starvation was the only alternative behind them.

The expansion of the Regular Army could then follow its normal course as originally contemplated in Lord Cardwell's scheme. Each dépôt battalion would be immediately filled out to war strength and give off a nucleus for a second one, and so on for as many as might be required, each being filled as far as possible with 20 to 25 per cent. of ex-reserve soldiers, 25 per cent. of young soldiers, and 50 per cent. either of Militia or Volunteers, and each would go to the front as integral portions of the old regiment with all its territorial connections and distinctions—the plan to which Napoleon invariably adhered as far as possible. In point of age and general composition, these units would be admirable—men of mature age in sufficient numbers to leaven the mass, and enough youngsters to give it the necessary dash. As to physique, they might not be so satisfactory, though they would probably be as good as any others we could obtain under any alternative system, for the literal fact is that we do not grow enough men with sound teeth, eyesight, and digestion to meet the severity of our medical tests. But though in small wars at a great distance from our base and under trying climatic conditions, it is poor economy to send out any but the soundest, in national emergencies close at hand we cannot afford to be economical, and in any case they would be far superior to the conscripts Napoleon handled, with brilliant success as far as he himself was concerned, in 1813-14.

The Militia and the Volunteers would remain embodied for home defence, ostensibly—practically to keep them off the rates. And here we come to what to my mind is and must be the principle reason for retaining them both on their present bases.

The conditions of distress in the labour market would not be constant or uniform in different districts. After the first shock, commerce would soon begin to recover itself, and new fields would open out, all having for their object the satisfaction of the most pressing needs of the community. The Militia and Volunteers being for the most part commanded by men of considerable county or commercial standing, would have their fingers on the pulse of every such fresh development, and might be conceded very extended powers of furlough in order to supply labour of the best kind in the directions most required. Such powers could not with equal safety for their judicious employment be confided to Regular officers, for our knowledge of modern commerce is not our strong point, nor would it be easy to draft any law of enlistment for a General Service Army which would be sufficiently elastic; for Regular soldiers there can only be one law, and that must be clear and well-defined. It is to be hoped we may never again witness the anomaly of men fighting side by side in a common cause, some drawing five shillings a day, the others—and the majority—one shilling only.

In this manner we obtain a guarantee that what recuperative work inside our islands will be possible during the continuance of hostilities will be supplied with the best possible kind of labour, and hence be the most remunerative in proportion to the capital available. Hence again more capital will be attracted, whereas if no such

¹ See recent correspondence in the *Spectator*—20,000 men were accepted, at least 80,000 volunteered. Also return issued by Committee of Volunteers C.O.'s, 1905.

adaptability were available, capital would be discouraged rather than attracted; but the result of the campaign will be decided ultimately by staying power, and therefore our chief aim must be to foster what is the main-spring of our whole efficiency, viz., capital.

A further cause for retaining them as two separate organisations as at present, of only less importance than the one already given, arises from the fact that each has sprung from different origins, and both have in the lapse of time adapted themselves to their special surroundings. The Militia can afford to give a month of their time without inconvenience sufficient to check their normal flow of recruits, which year by year has remained very constant. The Volunteers can only give chance hours which they can spare from their work, and the attempt to exact more immediately encounters resistance.

To deprive the Militia of their additional training to suit the Volunteers, or *vice versa*, would therefore presumably ruin both in peace, and in war would diminish their adaptability to the commercial needs of the moment, whilst in case of internal troubles arising from the pressure of want on the population, it is of the last importance to have the two separate organisations to play off one against the other. Personally, I consider that the Volunteers would actually be the most reliable force to employ in the event of popular disturbances, because they represent on the whole, when expanded by the older men who must flock to the colours under pressure of starvation, the pick of the working class population from the standpoint of patriotism and intelligence, and as such would be the first to realise the importance of checking mob violence at the outset. As a body they are commanded by men who have a large stake in the welfare of their several cities, and a very strong business interest in keeping down the rates. Where both Regulars and Militia, having no local interests to protect, might be apt to assume a too judicial attitude towards rioters, the Volunteers might act with what afterwards might appear as unnecessary vigour, but which would be most effective in its immediate consequences, and so far more important for the welfare of the State. In such cases it is quite immaterial whether legal process subsequently shows that the wrong men may have been killed, the only point which really matters is whether you have killed enough to make it quite certain that the necessity will not arise again.

But though I hold this opinion of the value of the Volunteers very strongly, I would nevertheless not dispense with the additional safeguard for law and order which I recognise in the existence of the two forces, for circumstances are quite conceivable in which we might have to use the one to overawe the other, just as in India we have from time to time to move a Mussulman regiment into an essentially Hindoo district, or a Sikh one into either.

It is contended by the advocates of compulsion—and this indeed is the strongest point that they make—that their proposals would automatically induce an abundant flow of officers to the Army, and that these could be compelled to study their profession far more seriously than the present holders of the King's commission. I grant the strength their position at first sight presents, but I submit that for the moment we have gone too far in our appreciation of the merely technical side of an officer's duties. This is a natural consequence of the peculiarities of our South African experiences, in which by the nature of the case an extraordinary strain was thrown upon

even our youngest holders of commissioned rank, and I base my strongest hopes for the future on the astonishing manner in which this load was assimilated by the vast majority of all who went to the front.

In the great war of masses which lies before us, there is little scope for the exercise of tactical judgment in the junior ranks. A company leader in the midst of a line of battle formed of half a million men on a front of ten miles has but small opportunities of displaying his tactical resource; his duties are limited almost to exact obedience to elementary principles and to the setting of a superb example of physical courage to his men. But books alone cannot teach this latter quality, which, in so far as it is not innate—and it rarely is—is mainly a product of a strong character, trained and developed by years of exercise of responsible power. Now, in the Regular Army, the "struggle for existence" is far less keenly felt than in civil life, and in a model regiment a man may pass years without one single necessity of staking his whole future on the result of his own decision. In civil life, however, and most particularly of course in the great engineering, iron, and coal industries, this necessity to decide and act is ever present, for there is no sergeant-major and the guard-room to enforce obedience; hence men learn to command by sheer force of their own personality, and above all to study the characters of the men under them. To such types the acquisition of mere technical knowledge comes very easy, and I leave it to my readers to decide which of the two types is likely to prove the more valuable in those great moments of tension for which after all no drill or tactical regulations even presume to prescribe.

As a practical illustration, I would again contrast the conduct of the American voluntary levies at Fredericksburg, Gettysburg, Petersburg, Cold Harbour, Spottsylvania, Chancellorsville, etc., with the fighting in the Mance Ravine (18th August), as Hoenig describes it. Even the conduct of the Prussian Guards at St. Privat looms small when contrasted with the bearing of Pickett's division at Gettysburg.

"In war," as Clausewitz wrote, "everything is simple, but to secure simplicity is difficult"; we are in great danger of forgetting this most vital truth.

Pickett's division had undergone less than a year's training—under fire for the most part, certainly. But the 1st Maine Heavy Artillery,¹ whose endurance at Spottsylvania and in the futile assault at Petersburg (18th June, 1864) was one of the most marked episodes in the war, were exclusively peace trained, and neither had even a tithe of the war-seasoned veterans and officers with which we can afford to stiffen our own first Line troops. The cause of their failure lay in the want of an experienced staff, capable of ensuring the exact and punctual execution of the designs formed by their respective leaders, and this want under competent direction our own Regular Army may be relied upon to supply; but with men trained like these, "to know how to die, not how to avoid dying,"¹ and under the conditions of armament of the present day, which, in the hands of a great leader, ensures by the power of convergence conferred by its increased range

¹ See Regimental Records, U.S.A., and "Losses in Battle" article in Scribner, 1895.

the certainty of sufficient fire preparation on any desired objective before assault, what limit can we set to what such men might accomplish?

If the Japanese, fighting under topographical conditions which almost paralysed their strategic offensive, and relatively weak in artillery as they are known to have been, could carry such positions as those at Nanu-shan, Liao-yang, and Mukden with gross losses far inferior to those endured by the Americans, what should hinder us, under the topographical conditions of Western Europe, from equalling their performance when the time comes to strike?¹

The choice of time is, in fact, at once the essential factor and the true secret of our strength; indeed, I am inclined to believe that the possession of a large army, large as judged by Continental standards, and capable of almost instant mobilisation like those of our possible enemies, would most seriously imperil the prospects of our ultimate success, should we find statesmen capable of resisting the pressure of newspaper public opinion, urging them to strike home and end the suffering of the nation by a single blow. To do so, however, in the early stages of such a war would be to play the enemy's game, for any force for which we could conceivably find transport *for a single trip* would be crushed by the numbers that any one of our great adversaries could readily concentrate against us at the commencement of the campaign. After a year of hostilities the outlook would be very different, for the strain on the internal condition of any foreign Power would act far more quickly than we in England have as yet apprehended.

Our enemies are in this dilemma—their machinery, like that of an ocean liner, is designed to work at full power only; at low speeds it is not economical. Now, to mobilise their whole army costs one million a day in round numbers, and paralyses all commercial operations, whilst to mobilise only a portion creates centres of disaffection which may lead to most serious political troubles, a prospect none of them will care to face.

There being by hypothesis no ocean borne import of food conceivable, there will be an accentuated demand for agricultural labour, and to mobilise the essentially country corps would be to hasten distress in the great commercial centres; on the other hand, to call out the town corps destroys the purchasing power of the civil population, thus in both cases playing into the hands of the socialist agitators.

We can see what is happening in Russia, the most invertebrate member of the European communities, and thence estimate how far more rapidly the more sensitive organisations of France and Germany would respond under the heavier pressure a blockade of the Atlantic seaboard would impose; for though the back doors through Russia, Austria, and Italy would remain open, the excessive railway rates, excessive as compared with seagoing freights, would very soon create a commercially intolerable situation.

¹ All those districts of Western Europe in which we may have to fight owe their topographical features mainly to the great "Ice Cap" (see Geikie's Geology, etc.), hence the slopes of the hills are almost invariably convex, not concave, as in Baloochistan and South Africa. This convexity renders it difficult to obtain a wide field of fire for entrenchments, except by placing them so far down the slopes that reinforcement is practically impossible.

Meanwhile, the resources of the world for war purposes would be pouring into our country, or organising in our Colonies, to come to our support, and the whole question appears to me to turn upon whether at this supreme moment of the national existence, we shall be able to find a real artist in war, a man who, to quote Moltke's definition of the art of war: "Knows how to make the best practical use of the materials at hand for the attainment of the object in view."

That his task would be immensely facilitated if we could give him a ready-made army, complete, according to theory, in cavalry, artillery, and infantry, is, of course, not to be disputed, and that with such he could attain his ends at an infinitely lower cost in human life and suffering than with our present inchoate machinery also goes without saying; but the essence of greatness is to control circumstances, not to be controlled by them, and I am firmly convinced that if the heart of the nation is still as sound now as it proved to be under similar circumstances one hundred years ago, that great man or a group of great men will be evolved in time for the decisive moment as surely as the sun will continue through all human existence to rise in the East.

Meanwhile, every step we take towards national military efficiency will be of service to him when the time comes, and since one at least—the creation of a great General Staff—seems to the mere human understanding an absolutely indispensable preliminary to the discovery of the man himself, or in his absence of the staff which must supply his place, let us proceed to its formation by the considerable expansion of the nucleus we at present possess. This nucleus is absolutely sound as far as it goes, but it is far too small to exercise its true functions in peace, and needs above all things the development of a new organ to take scientific cognisance of the forces, and their effect on human nature in all its phases with which it will have to deal.

This new organ is a strong and capable military history section, adequate in number to collect and collate the information and statistics needed as a basis for all sound scientific generalisations. At present our defects are all directly traceable, not to the ineptitude of the past or present generation of officers, but entirely to the empiric nature of the information on which they have been compelled to work. Each may have been right in his conclusions from his own surroundings, but there has been wanting the master to collate all observations and reduce them to one common datum level. The mass of information, however, has been too great for one finite mind to cover, but given systematised investigation, and the task would be reduced to manageable dimensions.

From this step everything would follow—the composition of the general staff itself in the first place; the proportions of the three arms and of transport, etc., in the second; and finally, a consensus of expert opinion would arise, as in Germany, on which the country might safely rely for the promulgation of all such changes of the principles of enrolment which alterations in our civilisation may render expedient. All other reform I hold to be dangerously premature, for on such matters no one mind can accumulate facts enough to inspire confidence throughout the whole nation in its conclusions, and without such confidence, no reform has any chance of permanent success.

But with the materials nowadays accessible to us, through the exertions of similar bodies to the one proposed above in France,

Germany, and Austria, I confidently believe that the task of creating order in our present chaos, and, what is more, of inspiring confidence in its military leaders in the hearts of the people, would be well within the competence of a very average man. To meet emergencies by the appointment of Royal Commissions, consisting of men who, however eminent, have received no serious scientific training in all that military history reveals, and to expect them to arrive at sound conclusions from the testimony of witnesses, whose training is as empirical as their own, is a waste of time, and time is the most precious factor of all at the present juncture. Yet, if our training of our scientific corps is not a most puerile farce, and the evidence of work accomplished in scientific fields by their past members is all against this view, then it is certain that we possess in the Army, men in every way the intellectual equals of those of any other, but they are condemned to sterility because our governing body does not seem able to apprehend the elementary truth taught by Moltke in the Prussian War Schools, that the "military sciences concerned with the conduct of war are as susceptible to scientific method as those employed by any other art—architecture, painting, etc.—and that one of the primary purposes of a general staff is to investigate these by scientific enquiry and place the results at the disposal of the 'artist' in war, who is to apply the whole."¹

I do not think that within reasonable limits it would signify much who was appointed to such a post, once the central idea was thoroughly grasped, and, the co-operation of all who could supply information secured, the rest would follow automatically, but, of course, the abler the man the sooner sound results would be achieved.

Given the foundations this mass of accumulated knowledge would supply, we could then proceed to the training of a general staff in the handling of large bodies, both strategically and tactically, for experience shows that with only moderate numbers this end can be attained—*e.g.*, the Prussians before Sadowa—and, indeed, all Europe ever since, for neither French, Germans, nor Austrians have ever concentrated more than 100,000 men for manœuvres, a number well within our powers, both at home and in India, and with the possession of such a staff, the one stumbling block of all emergency armies would at once be removed.

This is the one point in which all such formations have failed, and the one which it would seem not even supreme genius can surmount.

Tactically, the Napoleonic Armies in 1796 and 1800 were far behind the Austrians they opposed, in equipment they were miserable, but their numbers being small, his genius sufficed to impart that unity of purpose on which alone success depends. To the eye, his conscripts of 1812 and 1813 were far superior in efficiency, but he failed to secure combination in time and space for want of an adequate staff service. Under his own eye his consummate tactical skill still sufficed to ensure them the victory, though his infantry no longer fought willingly, and his cavalry had lost all power of manœuvre. In the American War of Secession, the Northerners were far superior in efficiency, judged by every peace time standard, to their opponents, they were equally brave and numerically preponderant; but they had

¹ Condensed summary of his reply to Max Jähns, given in the introduction to the latter's "Geschichte der Kriegswissenschaften."

no staff capable of combining all their efforts on one decisive objective; hence, the war dragged on for four years, and both in 1866 and 1870 it was the superior quality of the Prussian General Staff which conditioned their victories. Surely, then, the conclusion is plain; but we cannot act upon it immediately, not because our men are wanting in any of the qualities needed when judged by any European standard, but simply and solely because we have not realised what "scientific," as opposed to "empirical" method, really means.

For want of this we are wasting time, energy, and money, with the sole result that confusion becomes worse confounded, and our officers are being harassed into resignation at a time we can least spare their services. Such, after all, has been the invariable prelude in all Armies to the appearance of the great genius, for this very ferment and distress indicates the vitality which must end by producing the man. Like a chemically supersaturated and quiescent solution, we need only the slightest impulse from without to crystallise out in regular order. Had we remained lethargic, like the Austrians before Marengo, or the Prussians before Jena, there would have been most serious grounds for despair, but as it is the very violence of our fever convinces me that we are on the high road to recovery. First, we shall find our "Carnot," then our "Napoleon," for we are rapidly approaching the same ordeal by *hunger* which a century ago primarily conditioned the French Revolution, but moving faster by reason of the increased facilities for intercommunication our century affords. Our gradual relative loss of our share of the world's markets, from which we are being ousted by the commercial policy of our rivals, directed and subsidised to that end by the State itself, will create conditions of scarcity against which we shall be compelled to resort to arms, and then the trained manhood of the nation will flock to the colours precisely as did the people of France, for like causes produce like results, and then, as in the French Army again, our conflicting theories of *l'ordre mince et de l'ordre profonde* the same in essence then as they are now, will be adjusted by common sense practice on the field of battle itself. Napoleon did not create the Army, which, in his hands, became the most potent instrument of victory the world has ever seen, the army grew itself, and it grew because, throughout all its previous vicissitudes, it still retained sufficient vitality to think in advance on tactical and strategical subjects, and it was this accumulated thought of many which, in his hands, became its driving principle; it was not his phrases which drove the army, but his ability in choosing the phrase from current literature to which he knew his men would respond, and we shall tread the same path. We shall pour out blood like water, until the conditions of the moment evolve the man for the place, and all we can do in advance is to train for him a staff through which he can communicate his will to the potential armies, to be formed out of the trained men the nation has already grown not "created."¹

¹ Since writing the above, by a curious coincidence I have come across the following quotation from Guibert, in Captain Colin's admirable "Education Militaire de Napoleon," p. 107. Speaking of the state of the French Army, about 1778, and its prospects in the future, he says:—

"Alors un homme s'élèvera, peut-être resté jusque-là dans la foule et l'obscurité un homme qui ne se sera fait un nom ni par ses paroles ni par ses écrits, un homme qui aura médité dans le silence, un homme enfin

In conclusion the proposals I would submit are few and simple, and may be summarised as follows:—

Restore to the Regular Army the conditions of service to which the nation has grown accustomed, and which have served us so well. The new General Staff could ultimately determine whether to create a further reserve from the men over twelve years' service and under forty-five years of age. To me this seems unnecessary, since hunger is the all-sufficient compelling cause. Only as a matter of policy it might be well for other nations to realise what our total strength of seven years' trained men amounts to.

Retain the Militia and Yeomanry as they are, merely establishing machinery to trace what becomes of the men after leaving the colours. This could best be done by the leading county people combining in associations to recognise the value of the services they have rendered by assisting them to obtain employment, and particularly by alleviating special cases of distress amongst the very old. No man who has ever done anything for the nation, however small, should be allowed to feel that he is entirely without friends in his old age; but also the help given must appear to be voluntary on the part of the giver, not a claim on the community at large.

For the Volunteers as for the Regulars, I advocate continuity of conditions. The movement is only in its infancy, for corps are only just beginning to realise what they have accomplished already and may in the future attain to. Let them also keep trace of their retired members and endeavour to knit the whole body together with some stronger sense of community of interests. In many corps which have discharged their preliminary liabilities, considerable funds will soon be available with which a system of old-age endowment policies could be initiated as rewards for the smartest and most intelligent men, to be held for a fixed term of years in each rank. Such a scheme has recently been brought to my notice by which a smart soldier obtaining such a "scholarship" of the annual value of £10, and holding it 3 years as a private, 4 as corporal, 5 as sergeant, could, on attaining 55 years, receive about £320—enough to buy himself a very decent house, or get an annuity of about £25 a year. (I have not the actual figures before me.) It would also be quite possible for corps to give rewards to their men who would take advantage of the new County Council Technical Schools and so forth. All practically successful men realise that education without character is worthless, and many rich men who will do nothing to help education alone, might be found who would willingly encourage in this manner the only school for character which exists outside of the Regular Forces. Emulation between the several corps is already producing better and more attractive drill-halls with all their appurtenances, and the idea might be extended to the provision of suitable sleeping accommodation—something on the lines of the Rowton Houses—so that by combination the men might obtain all the advantages of a club whilst the nation would benefit by the development of the stronger *esprit de corps*

qui aura peut-être ignoré son talent—qui ne l'aura senti qu'en l'exercant, et qui aura fort peu étudié. Cet homme s'emparera des opinions, des circonstances, de la fortune; et il dira du grand théoricien ce que l'architecte praticien disait devant les Athéniens de l'architecte orateur 'ce que mon rival vous a dit, je l'exécuterai.' "

which only arises when men live together in barracks, and to which our enemies in South Africa ungrudgingly gave their admiration. These things will all come of themselves, for they are "in the air," and emulation and free discussion will provide the solution, and as they come the popularity of the force will continue to increase, and my estimate of our total of trained men will not only be exceeded, but the strength of the tie on which all fighting efficiency is dependent will be rendered more and more reliable.

But my estimate already exceeds what any alternative system could give us, and therefore I submit that my solution of the problem set before us in the thesis for the essay completely meets the case. It makes the best use of the available materials, it is the least irksome, because it is a natural growth, and all growth follows the line of least resistance, and it is the cheapest because it disturbs the existing relations between men and their employers to the least possible extent.

Cheapness cannot be measured by the Army Estimates alone, but must be judged by results, and what we need is the systematised investigation of what these results really are as measured by the increased "wealth-producing" power our military training confers on the race.

The problem is of course more intricate than in Germany; but I am convinced that careful investigation would show that even as we stand, and eliminating even the fruits of victory — Colonies, commerce, etc.—our Army and Navy in the past have won for us, our forces more than pay for their own support, and would do so even if we spent another £10,000,000 on them annually.

A railway spends perhaps £30,000 a year on maintenance of rolling stock—locomotives, etc.—and languishes. A new manager arrives and trebles that sum, and the line becomes a paying property, *e.g.*, the Great Eastern.

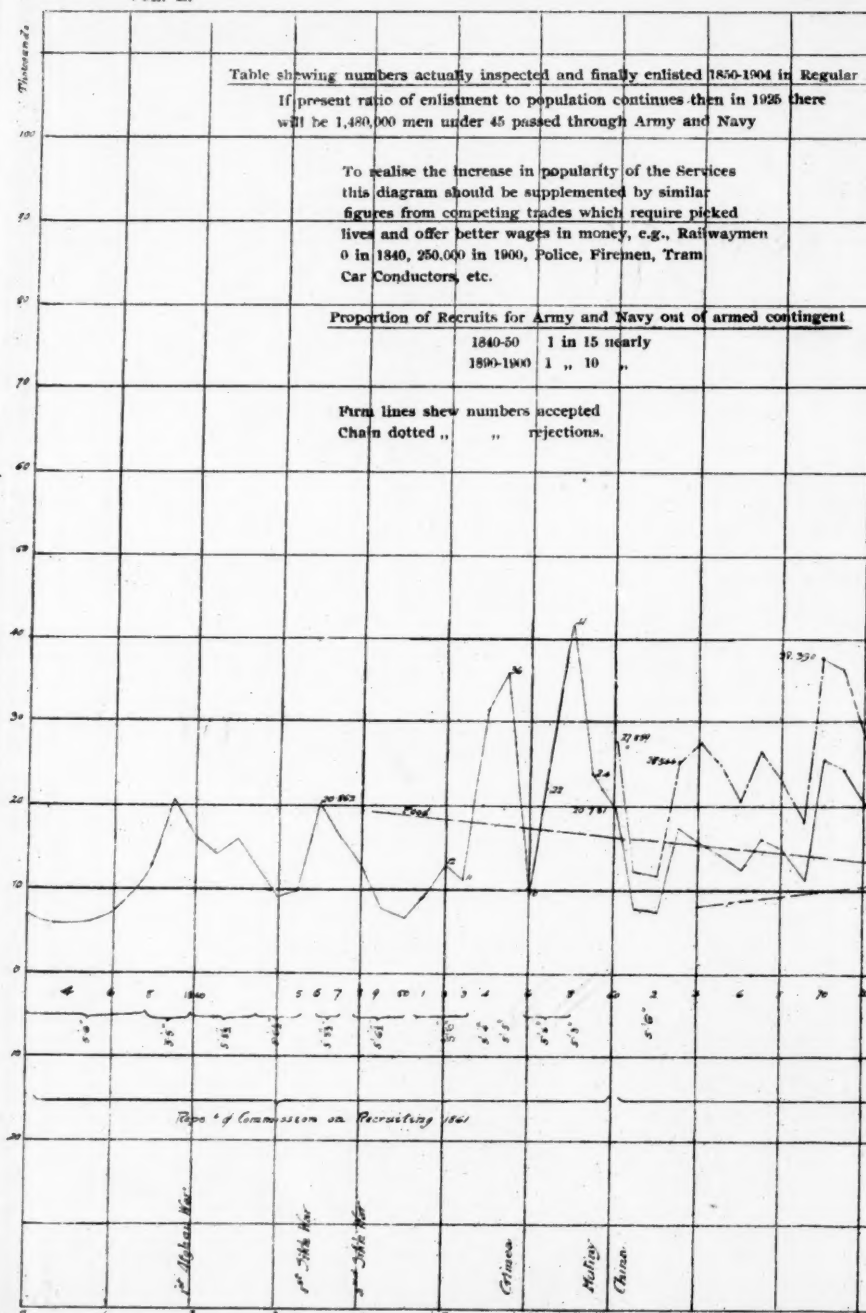
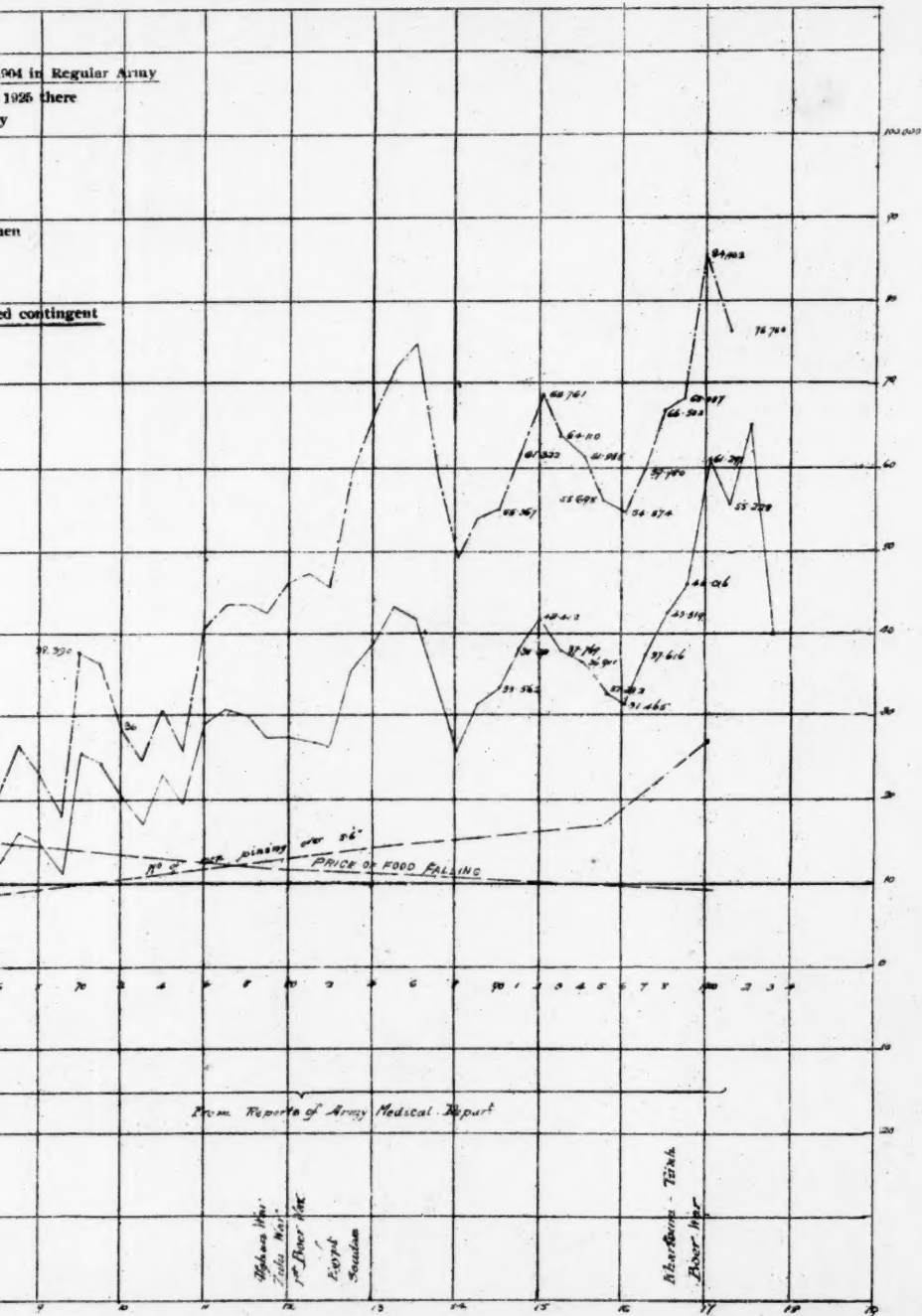


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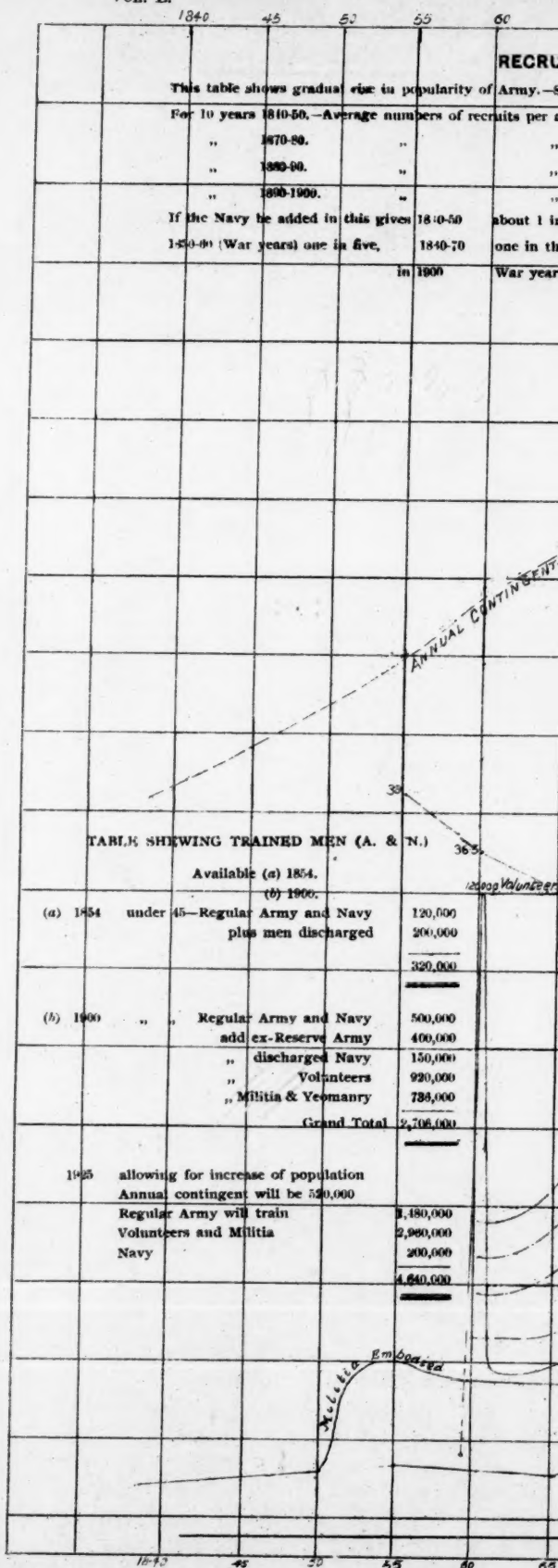
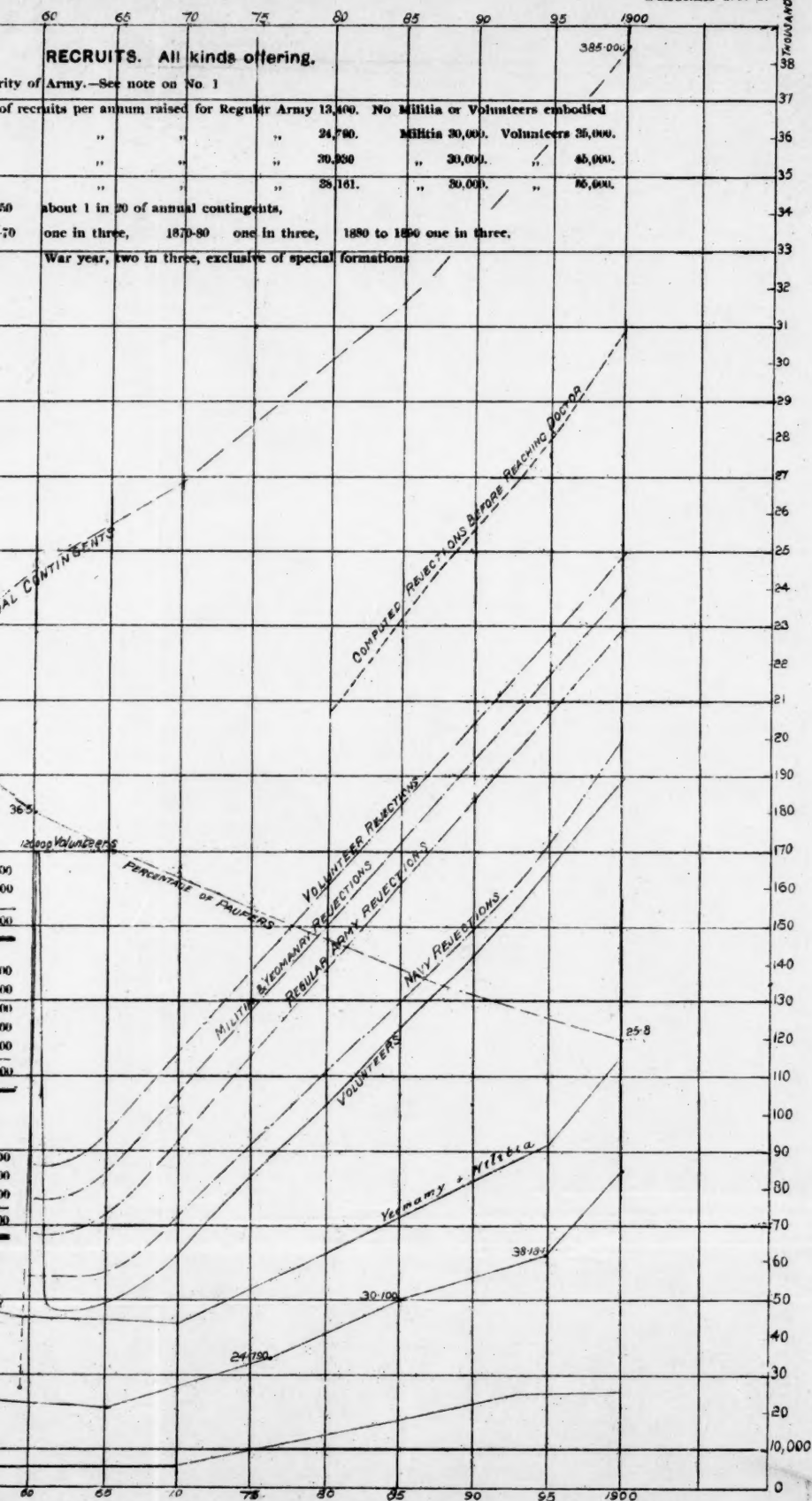


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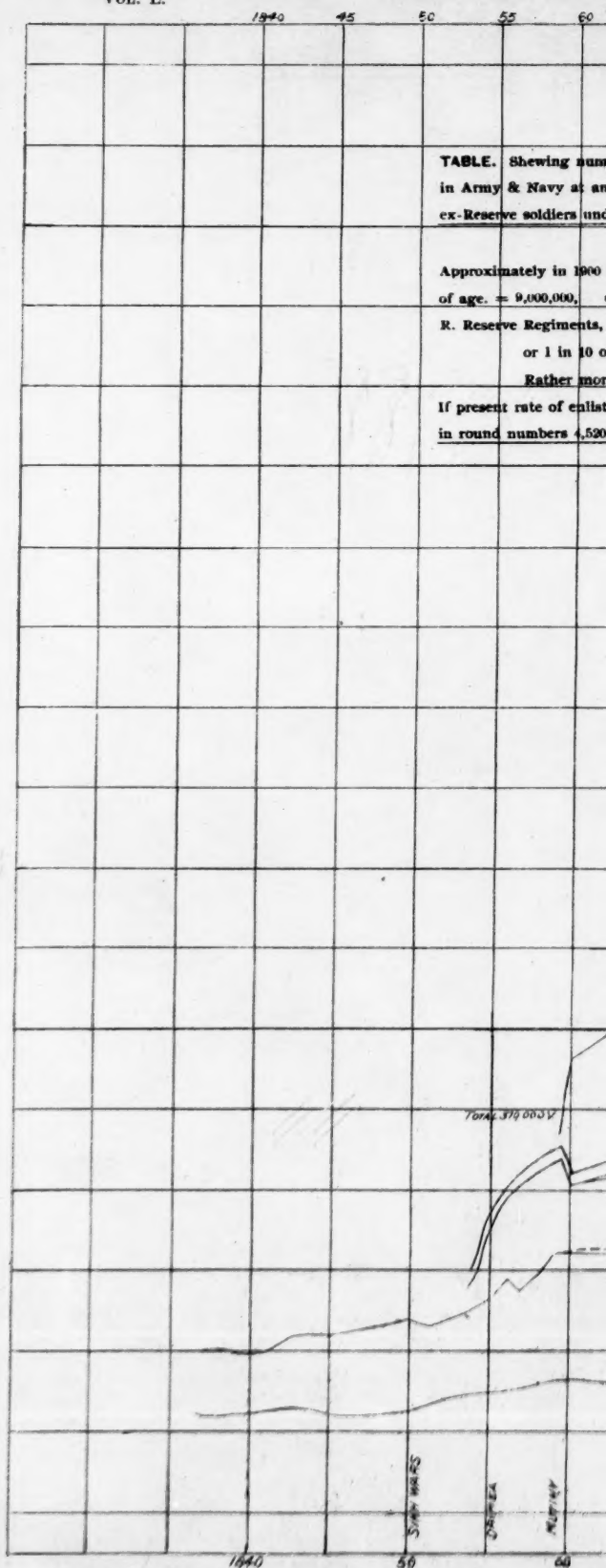
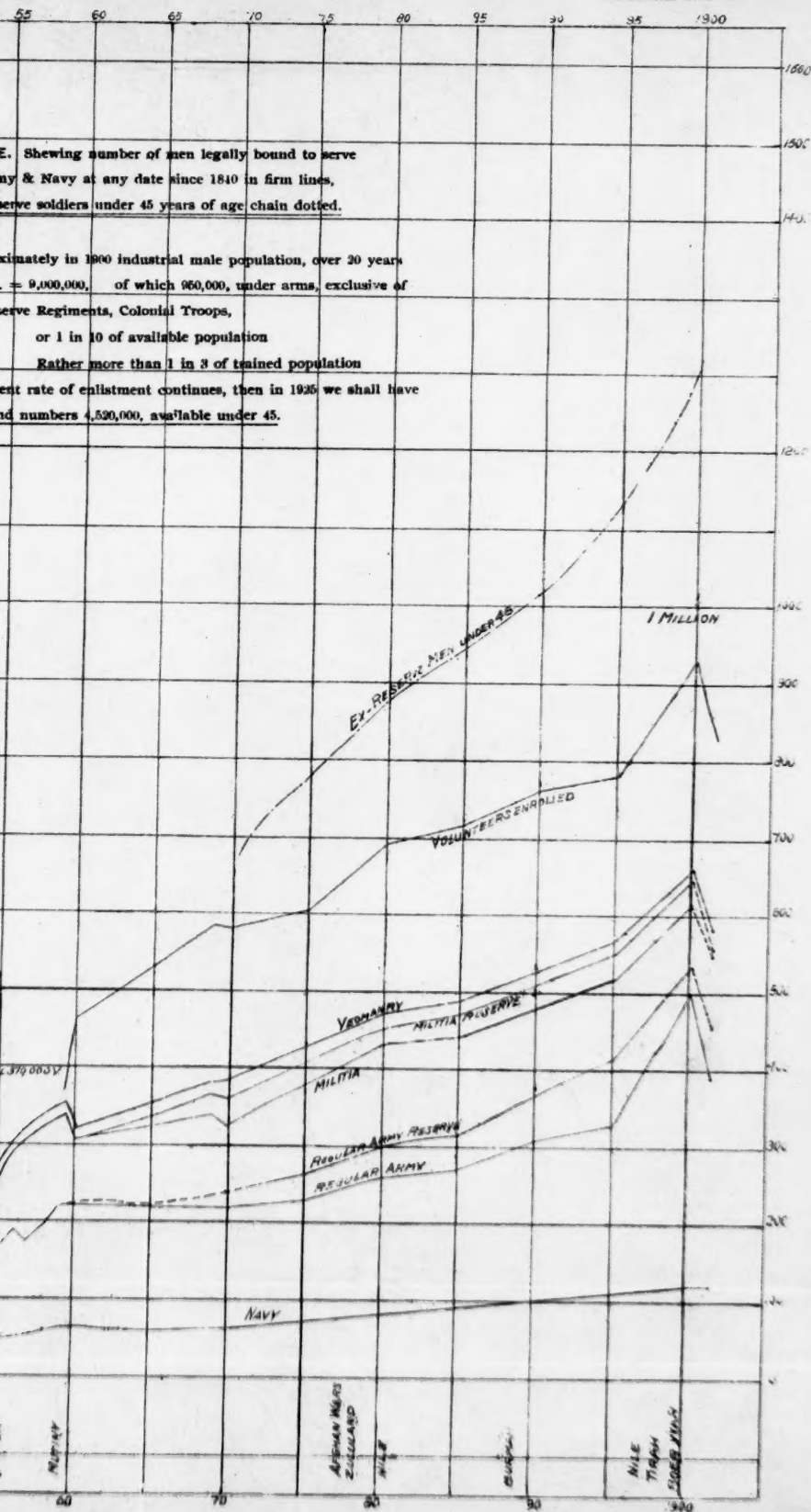


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DIAGRAM NO. 3.



E. Shewing number of men legally bound to serve
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Approximately in 1900 industrial male population, over 20 years
= 9,000,000, of which 960,000, under arms, exclusive of
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or 1 in 10 of available population
Rather more than 1 in 3 of trained population
If rate of enlistment continues, then in 1925 we shall have
and numbers 4,520,000, available under 45.

THIRD PRIZE SPECIAL MILITARY ESSAY, 1905.

Subject:—

“THE BEST, LEAST IRKSOME, AND LEAST COSTLY METHOD OF SECURING THE MALE ABLE-BODIED YOUTH OF THIS COUNTRY FOR SERVICE IN THE REGULAR OR AUXILIARY FORCES AS EXISTING, AND FOR EXPANDING THOSE FORCES IN TIME OF WAR.”

By Major G. F. MacMUNN, D.S.O., R.F.A., D.A.A.G., Derajat Brigade, India.

“Mene Mene Tekel Upharsin.”

IT is proposed to discuss in this essay the various points connected with the subject under the following headings:—

OUTLINE OF THE ESSAY.

Introduction.

PART I.

1. The purpose we require troops for.
The Premier's statement.
2. The actual forces we require.
Possible wars.
Expansion.
3. The *Rôle* of the Regular Army.
The provision of recruits.
4. The duties of the Auxiliary Forces.
The Militia.
The Yeomanry and the Volunteers.
5. The *Rôle* of the nation.
The civil gain from military training.
Rifle Clubs.
6. Conclusion from Part I.

PART II.

1. Compulsory training for lads at school.
The existing military training for lads.
2. The proposed system.
Public elementary schools.
The staff.
The cost of the cadet service.
Other schools.
3. Criticisms, difficulties, and alternatives.
The proposals and programme of the National Service League.
Sir Edmund Barrow's scheme.

PART III.

Various Cognate Matters.

1. Rifle Clubs.
2. The matter of the Navy.
3. The wastrel of England.
4. Existing institutions.

PART IV.

A Brief Recapitulation of Proposals.

APPENDICES.

1. Reference Appendix of data.

INTRODUCTION.

The subject of this essay is intimately bound up with the intricate question: "For what do we actually require our forces?"

For generations this problem has never been settled, and now that the principle has been recognised that it is for the Government of the country to study closely the question of military and naval policy, a very genuine attempt, with the help of the Defence Committee and the General Staff, has been made to solve that question, the result of which was given to the world in an authoritative pronouncement of Mr. Balfour in May, 1905.

The more the question is studied from its numerous and often conflicting aspects, the more difficult of solution does it seem.

The problems of the Continental nations are trivial compared with those of an Empire that has grown without full design, by chance, by adventure, and by circumstance. Interests and territories in every portion of the globe, with empire over Continents under conditions that are hopelessly anomalous, yet unavoidably imperative, present a military (using the word in its wide sense) problem that has baffled generations of Statesmen. It is perhaps small wonder that in the stress of guiding a nation to freedom without bloodshed, the

scientific development of our forces, at any rate our land forces, has been allowed to slide, all the more so that no two could agree as to the groove to guide them to.

Were we, in this twentieth century, able to organise our national forces on up-to-date lines, without tradition and vested interests behind us, even as Young Australia might be called on to face a military problem, it would perhaps be a comparatively easy matter to evolve a sound, workable, and acceptable scheme. We have unfortunately to deal with existing forces, unbusinesslike and unsuited to modern requirements, but with which the history and the sentiment of the nation is so bound up, that at present no Statesman is able to persuade the country that we want something different, or at any rate to force a new system on an unconvinced public.

All students of war and of history must recognise how feeble are the available military resources of this country. The history of the earlier years of the American War of Secession, with the pitiful failure of citizen soldiers, even against men little better in training, is an open book pregnant with lessons which but few will even read. Our own bitter humiliations in South Africa are forgotten, while the feebleness of our national levies is hidden in our pride at their patriotism, and in the unmeasured praise of badly-informed journalists.

Our military system enables us to cope successfully, after the expenditure of untold treasure, with the semi-military, slothful organisations of Kabul and the Farmer Republics, at the cost of years of subsequent depression in business and advancement, but it will hardly be claimed that we are in a state to cope with a Power that brings its best brains and its best energies to the problem of its national forces.

There is hardly a German, and hardly a Frenchman, certainly in the Rhenish provinces, who is certain who his great-grandfather was, and thus French and Germans have a very firm resolve that the invader shall not lightly over-run their country again. The people of Natal, who realised to the full the bitterness of seeing an insolent and overbearing foe quartered at his ease on their soil, passed a universal training and service liability law within a few months of peace being declared in South Africa. Since no invader has swept through England for close on a thousand years, no one realises that the duty of the freeborn is to be ready to bear arms for his country. We dub national service "conscription" — the term applied to the yokels dragged by Napoleon on to wars of aggression they had no concern in.

Thousands of English lads, who have never taken the trouble to learn their drill and the use of a rifle in their local Volunteer Corps, throng on Saturdays to watch and bet for hours on football matches. They laugh at the German bandsman and his bombardon in the road outside, or at the German waiter inside the pavilion, yet each of those Germans is a trained soldier, who of his own consent (since he comes of a nation with a constitution) is trained for the defence of his country, and is a far better man behind a hedge—or in front of one either—than our young Englishman, even perhaps if he be a Volunteer.

The point of the foregoing is, not that we in England need a system of universal service, as understood on the Continent, but that we assuredly do need a national feeling that it behoves every

youth to fit himself for the possible, if improbable, hour of his country's need.

The state of things where one man leaves his back garden and kids on holidays to go to the camp or to the rifle range, whilst his neighbour smokes in a hammock or takes the "missis" to "Ampstead," is not a creditable one, and is doing much harm to volunteering. The Volunteer, or more probably his wife, queries why should he work when his neighbour loafs.

It is, however, absolutely certain at present that nothing short of severe and far-reaching disaster, far greater than our troubles and humiliations in South Africa, will make the public consider seriously any form of compulsory National Militia. It is, therefore, incumbent upon those responsible for the military organisation of the country, or interested in it, to try to make the best of existing conditions, and to devise such a system as will develop the patriotic spirit that will bring men voluntarily to the ranks. Such a system should be if possible in such a form that the compulsory principle may be introduced later, without upsetting existing organisations, and it is on these lines that the proposition contained in the subject of this essay must be worked out. Before doing so it is necessary to enunciate the purposes for which we require our various natures of military forces, so that we may have a standard to work up to, and may understand the object to meet which any system of compulsory training is necessary or advisable.

1. THE PURPOSE WE REQUIRE FORCES FOR.

Up till May, 1905, the question "what do we maintain military forces for?" though the subject of interminable discussion and angry argument, had never been authoritatively stated by any person or body whom the country could accept as a final and responsible lawgiver on the subject. For years, therefore, all our military measures and reforms, however sound in themselves, had not been carried out as part and parcel of an attempt to attain to a recognised goal; but now for some time past the Defence Committee, in conjunction with the naval and military general staffs and the Intelligence Departments, has been studying and reviewing the naval and military position of the country, with all the information and memoranda that no other bodies can possibly command.

The Defence Committee, it must be remembered, was formed in pursuance of the theory that the man responsible for the military and naval policy of the Government is the Premier, and he only. The Defence Committee, with a permanent secretariat, presided over by one of the ablest strategists and administrators we have, assists the Premier in this duty, and this Defence Committee has before it all the information on every naval and military subject that the general staffs of the two Services can produce, suitably condensed for consideration from a broad point of view.

The conclusions, therefore, that the Premier and the Defence Committee have come to on the subject in question are born of information that hardly any private and single individual can possibly command. It may be safely said that the country may accept as final, at any rate for a space of years, the deliberate conclusions they adopt. It may always be possible to controvert their conclusions in a dozen different aspects, but not when taken in connection with all

the conflicting conditions of modern inventions, geographical positions, and strategical needs. This is an important point, for unless we accept Mr. Balfour's statement as final, we still have no standard to work to.

Mr. Balfour's Statement.

The gist of the statement made by Mr. Balfour, after the mature deliberations of the Defence Committee and the General Staffs, is briefly as follows:—

1. That an *invasion of England*, save by a small force of the nature of a raid, is an *impossibility under modern conditions*. The fact that this is largely based on, is that a force of 70,000 men is undoubtedly the lowest that could, with even the smallest hope of success, land in this country; that the shipping to carry this force, even if packed like herring barrels—and horses and guns won't pack very close—must be enormous. The transport of such a force must occupy a very wide front when landing troops, and since the five-fathom line lies some distance from the low-water mark, except in portions of our coast where the deep-water frontage is very narrow (such as off Margate), the ships must anchor some distance off shore, and it will take certainly two nights and two days as well to get this force on shore. This being so, it will be impossible to protect the trooper shipping against the coast-defence shoals of torpedo-boats and destroyers during the time necessary to disembark the force. This is the most important and controlling statement in considering this question of national training.

2. The ex-Premier further gave it as his opinion that the defence of India was the military problem of the Empire.

3. The fortified Colonial ports should not be more numerous than necessary for the needs of the fleet. Further garrison than this means dispersion of force and strategical weakness.

Now it will be remembered that when the Royal Commission, presided over by the Duke of Norfolk, asked the Defence Committee what was the strength and standard at which it was considered that the Auxiliary Forces should be maintained, they were told that the subject was still undergoing consideration, but that it might be taken that 100,000 Militia and 200,000 Volunteers would be required. It is very evident that at this time the enquiry referred to by the Defence Committee was only in its initial stages, and that the final and very different conclusions had not then taken shape.

It will be seen that in the matter of Home Defence, the status of these Branches of the Auxiliary Forces has been much modified. The Militia, the Yeomanry, and the Volunteers all exist primarily in the eyes of the law for Home Defence, and include a large Home Defence Field Army. By the decision of the Defence Committee it has been settled that this large Home Defence Army is no longer needed. The future of Auxiliary Forces, and the object of Compulsory Service therefore, has to be considered from a new standpoint. There is a secondary purpose, however, fulfilled at any rate by the Volunteers and Yeomanry, which has not been forgotten by organisers in the past, and that is, that these forces have, to some extent, kept alive the military spirit of the nation, and have, in the recent war, provided a proportion of trained men whose profession and family ties allowed them to volunteer for service in the field at the time of a national emergency. It was in furtherance of this idea

that the force of Yeomanry in the country was recast and nearly doubled after the war. Twenty-five thousand mounted soldiers could never be required for the defence of hedgebound England — as many cyclists would be far more useful — but with the possibilities of a Boer War before us, and no guarantee that such trouble may not occur again, or that we might not be involved in a war requiring a large expansion of mounted forces, it is evident that this large mounted force of Auxiliary troopers is training many lads to some knowledge of horse and rifle.

Presumably, the Defence Committee are engaged in studying the many corollaries that result from their decision, and in default of further definite pronouncement to guide us, it would seem that the purposes for which we require troops are briefly as follows, and it is in accordance with these that we must develop our plans for some form of compulsory training. We require troops then:—

1. For our foreign wars, first and foremost the defence of India, and its peace garrison and then for our Colonial garrisons.
2. Secondly, for the defence of our Home naval harbours, arsenals, and dockyards, against raid, as well as for our principal shipping ports.
3. Sufficient Home Defence Field Army to make any landing except in force a hopeless task. Sufficient, that is to say, to defeat any attempt, except by a force so large as to make its landing in safety outside the bounds of possibility.

The actual forces required for the above will be briefly discussed in the following paragraphs before proceeding to investigate needs for and means of compulsory training.

2. THE ACTUAL FORCES WE REQUIRE.

It has been recognised that the war that looms clearest before us is the struggle for Afghanistan with Russia, and its ultimate outcome, the defence of India. This alone involves the treatment of such a campaign in a spirit of thorough preparation. We shall require a large force in addition to that in India and the Indian Army. A force the equivalent, declares the Premier on Lord Kitchener's authority, of not less than eight divisions of all arms, something well over 100,000 men in addition to drafts. We have also to provide for the peaceful state of India during the war.

With our Indian Army, English and native, and these 100,000 men, we could not put into the field as big an army as Russia, with far inferior railway communication to that existing in Central Asia, has been able to put before Japan.

That is to say, we must be prepared to put every Regular unit we have into that particular Theatre of War. But we have world-wide garrisons which are, and must be, in peace time, held by Regulars. Here at once we see that we must be prepared to relieve all Regular garrisons in the Kingdom, to free them for the field. We must also be prepared to take over the Indian compulsory garrison with Auxiliaries, that is to say, the force of Europeans considered necessary for internal order. Before going further it is evident that we want data as to other possible wars.

Possible Wars.

It is very often forgotten that our Navy is essentially in the final stages of war but a defensive force. It cannot climb mountains or even cross plains. Capitals and vitals of nations do not as a rule lie on the coast. For our island existence, since we neither grow our own food, nor the raw materials in the manufacture of which our millions earn the wage to buy their foreign food, an all-powerful Navy is essential, but to other nations who feed themselves or draw their supplies by rail a navy is not a vital necessity. Our all-powerful Navy saved us from Napoleon, but it did not bring him to Elba. It was land forces which did that, and the raw red ulcer in Spain was not the least factor. Therefore, since a powerful navy is an essential to us, we have it, and we pay a king's ransom for it, and cannot afford to maintain a large army in peace time as well.

At the same time, if we are to end a war with any Continental Power, we shall probably have to use a land force to clinch matters, not by attempting to cope with the armies of the Continent, but by reducing the foreign possessions of our foe.

The following are wars that some day may come to pass, since we are a nation with two long land frontiers:—

1. The oft-discussed war with Russia.
2. The war with a Continental Power with which none of our accessible frontiers march.
3. A war with the United States of America.
4. A rising of the Dutch in South Africa.

Of these it is evident that one of the possible land operations, especially in the case of a European Power with foreign naval ports, would be an expedition to destroy one from which cruisers sallied to prey on shipping. This is the more probable nowadays, since modern conditions have made blockades more difficult than they were a century ago.

The whole of this points to the fact that our Army organisation must have some capacity for expansion without overwhelming cost of maintenance.

Now, it is incontrovertible that whatever system of service we have, the troops that furnish the foreign garrisons in peace must come from a voluntary army. There is, however, no reason why for war purposes compulsory service troops should not be employed. As has already been said, nothing in the world less than a Jena or a Sedan will make the nation accept any compulsory form of semi-Militia service. A Majuba or a Colenso but sends us a-mafficking or its opposite. Many excellent schemes have been put forward from time to time to give effect to a principle of compulsory Militia service combined with the training of lads at school, notably that outlined by Major-General Sir Edmund Barrow in the *National Review* for October, 1904. They all fail in this way, that while able, moderate and suitable, they are put out of court by the fact that the country will have none of them. The only thing to be done is to devise some scheme that will be acceptable under present conditions, and that will meet existing conditions.

There have been, it is calculated, some 18 millions sterling of private money spent on the development of the Volunteer Force alone, while the Militia, despite the difficulties connected with its modern

training, is deeply rooted in the county feeling of the country. It would seem that there is no alternative but to keep to some extent the forces of the country as they now are, after removing all the anomalies that directly hamper their efficiency.

We have a Regular Army of some 280,000 men, which is the very utmost that we can get recruits for. However much we improve the conditions of the soldier, the mass of men must come from the unskilled labourer class, or the man who has temporarily failed in civil life. No others can afford to join the Army at a period when, if they are to make their way in civil life, they must be learning their trade or profession. For a special war, however, we can always count on any number of men of all classes eager to serve. Unfortunately, they are many of them devoid of any training.

The Regular Army is roughly half abroad and half at home. If all the Regular troops, other than the Coast Defence Artillery, were available for the field, the Army thus formed would be a considerable one, even judged by European standards. Added to the Native Indian Army, and the European troops in that country relieved of their garrison duties, the army available to defend India in the East would be large enough for the purpose required, provided always that drafts were forthcoming for its maintenance at strength.

Now, it will probably never be possible to take European troops from India, supposing we were at war with another Power than Russia, but the rest of the army is a very powerful force, say 150,000 men, if it could be made available. With it any oversea expedition could be undertaken that we could possibly engage in, whether with a Continental ally or to occupy foreign oversea territory.

In the event of a war for the defence of Canada, the combination of this force with the Canadian Militia would be equal to the work in front of it, till more troops could be specially raised at home and in Canada, and in a war like this it would be necessary to raise special troops in large numbers. But to get troops to Canada we should need the command of the sea, so provided we have the machinery and the material to raise special troops we shall have time available. The United States, like ourselves, do not maintain a large Army, and Canada is endeavouring to put her Militia on a footing that will enable them to hold on till reinforced.

From the foregoing the following may be deduced:—

1. That our Regular Army is enough by voluntary enlistment, provided that it can all be made available in war time for service abroad and can be kept at strength.
2. That under special and not improbable circumstances we may have to improvise special troops, as we had to in the Boer War.
3. That we must be able to compel certain of the Auxiliary troops to serve abroad in relief of Regular garrisons, at a time of national emergency, or at the will of Government.
4. That we must be prepared to provide reinforcements to keep the Regular Army in the field up to strength, and to raise special corps of horse and foot, and possibly artillery.

Expansion for War.

If we are to accept that a large Army in war is a necessity for England—and many of the public grudge even the small one, and refuse to understand its needs—the question is: How are we best to expand?

Compulsory Militia nothing will induce the nation to accept. What, then, have we?

We have the Militia that at present attracts the class who have leisured months in the year, and who will serve partly for a wage. The Volunteers and Yeomanry provide the means for those patriotic people who will give some modicum of their time for the sake of their country.

It is obvious that if the Militia are legally bound to serve in foreign garrisons when wanted to free the Regular Army, which is not a very severe demand on this force, we have provided for expansion in some measure.

If the Yeomanry and Volunteers can be brought, as many believe they can, to a pitch sufficient to provide the bulk of the Home Defence Force, we have another element of expansion, in that we free all our Regular soldiers for war abroad.

If now we recognise that thousands will serve their country in war who cannot do so in peace, and provide machinery for their employment, then we have a very considerable degree of expansion.

The question is how to actually expand, and there seems no doubt after the experience of the last war that many men can and will come from the members of Volunteer and Yeomanry corps. The more men join the corps the more will men, who have some military training, be available in war time. These forces would seem to be the machinery that if properly exploited will give us the power of expansion in a war that requires more troops than our Regular Army can find.

We want a machinery that will allow of these corps throwing off a portion of their number that will either join the Regulars by squadrons and companies for the period of war, or who will join, in similar squadrons or companies, special corps that are being raised for the war. The grouping of Volunteer and Yeomanry corps into groups that between them may be expected to afford sufficient Volunteers to furnish a corps to take the field abroad, should be a special feature in our preparations. The net of these Volunteer forces should be a wide one, and they should contain on their books such efficient members as, while abandoning active volunteering, shall be likely to come forward to serve in a war.

If, however, the nation is to escape from its military liabilities by the help of its existing voluntary systems, which it has been shown do in principle meet to some extent our national needs, then these systems must receive *far healthier support* than they do now.

The question then for us to decide is: How can we encourage and develop the right military spirit, as distinct from the swashbuckling form, in the nation at large, so as to induce the class that can suitably take Army service to do so in sufficient numbers, and those that prefer to pay others to do their work for them, to perform their share in the Auxiliary forces.

There are many institutions in the country that try, often with heartbreaking disappointment, to bring folk to a right view of their

duties, but they cannot reach the mass, and there can be only one rational way that will give us some definite results, short of compulsory Militia service, and that is the compulsory training in drill and the use of the rifle by lads at school, in amplification of the physical training that the Board of Education has introduced in late years. *Pari passu* with such training the education of the minds of children in some of the glories of the past and the dangers of the future, with the need for a knowledge of arms, must be given.

It is no use asking for more, when it is certain that the nation won't listen; but if the country refuses the easy task of preparing more fully its voluntary power of expansion, and of stiffening its national character and physique, we must drift on till our Jena or our Austerlitz brings us through the fire, a wiser and a weaker people.

The scheme proposed will be elaborated in Part II. of this essay. One grain of truth may here with profit be absorbed.

In the first nine months of 1904, 71,698 recruits were medically examined for the Army, and 24,658 were rejected as medically unfit, over and above a portion manifestly unfit, whom the recruiters would have refused to proceed further with. It is not to be imagined that these rejections came all from the wastrel youth of the large cities. Whence this national feebleness, the recurring tale now of many years?

3. THE ROLE OF THE REGULAR ARMY.

Under the conditions laid down by the Defence Committee, the Regular Army will have little to do with the question of home defence. Whether it be stationed in peace time at home or abroad, its duties will seem to be as follows:—

1. To find the foreign garrisons in peace and to be available in war to take the field, with certain exceptions. For this purpose it will be relieved by Auxiliary and Colonial troops, on war threatening, from most of its garrison duties, and those Regular troops furnishing the peace time garrisons will be embodied in certain brigades and divisions with their mobilisation stores ready.
2. To find a small nucleus of troops of all arms for the Home Defence Army, which, as embodied Auxiliary troops become more fully efficient, would be available to reinforce the Army in the field.
3. To furnish the bulk or at any rate the nucleus of the coast-defence artillery, both at home and in foreign garrisons, and also to provide a considerable proportion of the field artillery for the Home Defence Field Army.

It does not follow that all the Regular Army will be stationed abroad. The main force of an expeditionary army to any part of the world, except the Far East, would come from home, where, as now, much of the Army will be. It will, however, be earmarked for foreign service, and little for home defence. The terms of service, of the men forming the Regular units of the Army stationed at home and the Army serving abroad, may or may not be the same. They lie outside the scope of this essay

The Provision of Recruits.

Once it becomes impossible to maintain our Regular Army by voluntary recruiting, we must revolutionise all our methods; but such a change will be so drastic that every effort will be made to secure recruits. We get 70,000 men a year at present, of whom 24,000 are unfit. If we could breed fit lads instead of weaklings we should have a large margin. We have not yet exhausted the attractions to be offered by State employment for ex-soldiers, while it is believed that the scheme unfolded in Part II. may do much to popularise service in the Regular Army for those to whom it is suited.

4. THE DUTIES OF THE AUXILIARY TROOPS.

Assuming that the foregoing deductions are the correct ones, the duties of the Auxiliary Forces seem to be clearly defined as follows:—

The Militia.

1. To understudy the Regular Army in every way, and to be liable by law to be sent to relieve the garrisons of Regulars whenever the King in Council may order it.
2. To be available, if it volunteer, to serve in the field itself, or possibly to be legally liable to this also.
3. To throw off companies of Volunteers under Militia officers to join their territorial Line battalions in the field.
4. To find much of the artillery for coast defence.

The Yeomanry and Volunteers.

To find the Army for the garrisons for all home defence, such as the coast fortresses, and also to furnish the bulk of the Home Defence Field Army. This latter, however, under the new ideas will be far smaller than formerly. This Field Army will probably have a small Regular nucleus.

5. To keep alive the military spirit of the nation, and with this view their numbers should not be whittled down to dovetail with any special scheme, but every man be encouraged to join, and the establishment be fixed so high that it be never reached. Those corps detailed for the field Army and the fortress garrisons to be better equipped, and to have a larger permanent establishment, to enable them to take the field at once at a certain strength.
6. To provide the machinery for expansion in war, viz., to be prepared to throw off in common with the Militia, as they did in South Africa, service companies and squadrons to join cavalry and infantry regiments of the Line in the field.
7. And again, should events demand it, to be prepared to throw off whole regiments of Volunteer infantry and Yeomanry from Volunteer brigades and Yeomanry groups; to become, in fact, the machine from which

men who do not enlist for the Army or the Militia can join for the period of the war, to proceed to the field. It is not possible to get men to register themselves for any service in case of war, for the status of a civilian may vary at any time from his profession or from matrimony, so that any such burden would be intolerable. We must depend, as we undoubtedly can, for numbers on the portion of the people free to obey the dictate of patriotism, and join the Army for a war.

It may, however, some day be necessary for us, as it was for both North and South, to pass a law compelling all men between certain ages, or as many of them as required, to join the forces in time of war. For this the ever present, though somewhat rusty, machinery of the ballot exists; but there is no reason to suppose that the nation in its trouble will not insist on exacting a fuller service from its manhood than the ballot for the Militia demands.

5. THE RÔLE OF THE NATION.

The foregoing generalities have brought us to the point where "the nation comes in." It has been shown how the defence of England on her own shores is not to be greatly apprehended, but that we may in any war want more troops than we can afford to maintain in peace.

The nation, with its voluntary forces, virtually compels the starving to serve in place of those who pay them. This is what our voluntary system for the Regular Army amounts to in great part, and must always amount to.

As it cannot compel enough men, or afford to pay them if it could get them, it has to some extent taken the duties on itself in the Volunteer and Yeomanry Forces. We now find that these forces are not required for home defence in anything like the numbers we had imagined; but with the example of the late wars before us, the possibilities of modern wars brought home to us, we find that we may have to improvise forces at any time. We are so situated, fortunately, that so long as our Navy is kept up to the mark, we shall have time to evolve these forces.

We have, however, before us (though not publicly, for the Press and self-esteem burke facts deliberately) that a large proportion of the hastily-raised troops during the late war were a positive reinforcement to the enemy, so easily did they fall a prey to their hands, with all their new accoutrements. The best improvised material was that which came to us with some slight military training and some notion of the rifle; naturally the men who had served or were serving in the Auxiliary Forces, notably the Volunteers and Yeomanry.

It is evident that in raising troops in a future emergency we either want to get drafts from the Auxiliaries to join the Regulars or to form special units, and we want every man who comes forward to have had some training. We want the Volunteers and Yeomanry to train as many Englishmen as possible to some knowledge of arms, and as many men as possible to be trained by these forces. But the less of their scanty time that Yeomen and Volunteers have to spend on elementary drill and rifle shooting, the more time can be devoted to the higher military training. As this training must always be a

difficulty with civilian soldiers, it is eminently to be desired that all men before they join the Auxiliary Forces should be trained to some knowledge of arms. Further, since all men are not able to join the Yeomanry or Volunteers, but yet may be able to serve for a war, it is obviously desirable that they too should have a military training.

The whole nation should have therefore a training in early age, and the main question is, how can this be done? remembering always that the nation will not stand anything in the way of a compulsory Militia, and the highest we can hope is that every man who can shall join the Auxiliaries, and not feel himself a man till he has done so, and that every lad shall pass a standard in military training as he now passes in ordinary knowledge.

The Civil Gain from a Military Training.

The advantages that the training in Continental Armies confers on their nations is now being very seriously recognised by organisers of labour abroad and at home. The distinct advantages in the way of manufactures that Germany is daily gaining over us is attributed by many business men to the habits of discipline, punctuality and self-restraint that Army training involves. This in our country is nullified to a great extent, happily far less so than in the past, by the fact that the English ex-soldier loves to get drunk, as does his civilian contemporary, and therefore the reliability that his training tends to give him is heavily discounted. The value of the sober ex-soldier and ex-sailor is amply testified to by the demand for commissionaires and other men of unimpeachable character for places of trust.

Every tradesman who employs errand boys, and every employer of labour deplores the spirit of unnecessary independence in the youth of to-day which rebels against discipline in any form (and the discipline of the employé must always be strict). Errand boys won't run errands punctually, labourers will laze from Friday to Tuesday, self-restraint and application are noticeable by their absence. The same cry is heard from the clergy as from employers and tradesmen. This desire to be freed from all personal restraint is doubtless the first effect of a generation of universal education on unprepared soil, doubtless also in the gradual process of evolution it will give way to something better; but as the case now stands it is no common thing to hear the clergy, despite their dislike of militarism and all they understand (or misunderstand) by the word, say that universal military service with the discipline it entails is the only visible panacea.

The distinct result of this feeling is the introduction and rapid increase of the Church Lads' Brigade and kindred institutions that are doing wonders for the country in an unobtrusive way. For every lad who submits himself to this beneficial form of restraint and physical development, there will be twenty that do not.

The need of the nation, morally and physically, as well as from a military point of view, is for all lads of all ranks to undergo a process of discipline that will combine the submission of will with the training of arms. The further good to be anticipated is that with every lad initiated to military methods in some minor degree, the spirit that will send all men to the Auxiliary Forces for a time will also develop.

In this matter of encouraging the military spirit of the nation, of directing public opinion into right lines, and of arousing the deadening apathy that surrounds shopkeeping England, there are many public bodies engaged, notably the National Defence League, the Army League, the Auxiliary Forces themselves, and those school-masters who are officers in, or who support and encourage, School Cadet Corps; but it is high time that those that won't bear the national burden should not be allowed to shunt their responsibilities on those that will.

The principles and methods which it is considered the nation may be prepared to consent to, and which will insert a lever to move the inertia of the nation in military thought, are detailed in the following Part II. of this essay.

The term Regular or Auxiliary Forces, as used in this essay, seems to indicate the military as distinct from the naval forces, though, used in their broad sense, they imply naval as well. Reference, therefore, to naval service is made in the ensuing Part II.

Rifle Clubs.

It has been urged that it is the duty of every citizen to fit himself for his country's service, and as all cannot join existing forces, a strong movement, started by Sir A. Conan Doyle and others, and re-stirred in 1905 by Lord Roberts, has taken up the formation of Citizen Rifle Clubs. Their object and advantages are obvious, and will be treated of in Part III.

Before entering upon this portion of the essay a *résumé* of the conclusions arrived at and axioms adopted, which are scattered through Part I., will, at the risk of some repetition, be useful.

6. RÉSUMÉ OF THE CONCLUSIONS IN PART I.

The subject of this essay demands the best method of securing the able-bodied youth of this country for service in the Regular or Auxiliary Forces as existing, and for expanding those forces in time of war.

The following is a *résumé* of the conclusions arrived at in the foregoing pages:—

1. That while a more homogeneous system might be more satisfactory, the existing varieties of forces are the only ones that the nation will submit to.
2. That these meet in a fair way, if they be put on a sound footing, the requirements of the nation, provided:—
3. That the Regular Forces can all, or almost all, be freed for war, by being replaced in all foreign garrisons by the Militia.
4. That the Yeomanry and Volunteers have a threefold purpose—
 - a. To provide for home defence.
 - b. To train the men of the country to arms and preserve the military spirit.

- c. To furnish reinforcing drafts to the Regular Forces in the field, of patriotic men who will serve for the period of the war, and to provide and organise special corps that may be necessary to raise during a war, for the period of its duration only.
5. That the forces as they now exist furnish a very light burden on the country, and that to avoid further increase of this burden, steps must be taken to ensure that all men in England have a rudimentary military training to enable Auxiliary corps to waste less time over preliminaries, and that ordinary men who do not join the Auxiliaries may have some foundation training, so that when volunteering for the service of their country in time of stress they may not be useless.
6. That the nation may fairly insist on a military education being given to its children in the same way as ordinary learning.
7. That the advantages and desirability of Rifle Clubs are obvious.

PART II.

THE COMPULSORY TRAINING OF LADS AT SCHOOL.

The following scheme, it should be remembered, is based on two assumptions, drawn largely from the argument in Part I., *firstly*, that for the safety and service of the nation, the instilling of a patriotic spirit of an elementary military training and habits of order is a necessity yearly growing more apparent; and, *secondly*, that the nation will not accept anything involving compulsory service in a National Militia. There is the hope that it can be brought to approve of some such scheme as unfolded, the more so when we consider that the laws it would be necessary to pass would not affect any of the existing adults.

There are a great many difficulties that lie in the way of any scheme of school training. There is a large class who have a horror of "militarism," though quite what they understand by the term it is hard to say. There is also a horror of soldiers and Regular officers because, though perhaps very erroneously, they are credited with very hard and fast Martinet ideas, and with a great want of sympathy for the needs and difficulties of citizen soldiers. Fortunately the clergy are very largely in favour of discipline to counteract the lawless and independent spirit of the age. They have given great proof of this in their hearty support of the lads' brigade movement, over which the junior clergy spend hours of their scanty leisure and often much of their slender stipend. The part of military training they endeavour to instil is obedience to superiors and the cleanly life.

On the other hand, they have rather a horror of much they see in the Volunteer movement. The reason of this is not far to seek. To attract Volunteers it has been found necessary to make camping work something of a *beano*—not too much work with plenty of sing-songs, a town near with complacent female society, and not too

great an observance of sobriety. Knowing that in certain corps this sort of thing is apt to prevail, after the manner of mankind, they think that it is universal. The only corrective to this evil is to guide the spirit that leads men to volunteer to have more patriotism in it, and to ensure that the trainings in camp shall always be interesting and attractive, which under good management is quite possible. General Sir Ian Hamilton's evidence before the Norfolk Commission was to the effect that Regular officers serving with Volunteers must be, but often are not, of the very best we have.

These details are entered into to show where, in enlisting the help of the clergy and the school teacher, difficulties and objections will be met with.

The whole policy advocated in this essay is to make the Volunteer force the ultimate mainstay of the nation, stiffened by the training of the youth at school; and it is a matter of concern that the clergy should have an objection to the force that is not without some amount of reason. The tendency of youth to wine and women is undoubtedly enhanced where there are soldiers, partly because of the admiration of the fair sex for the *divil-me-care* attributes with which they credit even the civilian soldier. Bacon says in his Essay on Love: "I know not how, but martial men are given to love. I think it is but as they are given to wine, for perils commonly ask to be paid in pleasures." This spirit, then, that from time immemorial has been connected with the soldier always militates in men's minds against military service in any form, but in reality it is largely born of the spirits of youth, and no religious teaching that we have yet seen in the world can do more than restrain it.

The more good feeling and discipline is inculcated in youth, the less will Volunteering present the evils which the clergy deplore, and perhaps exaggerate. At any rate, we want and we must strive to obtain their full support in the scheme we are considering.

The whole principle of a satisfactory system of school training would appear to be, that it should lay in the hands of the teachers and educational authorities, and not in the hands of military men, save in a remote degree. In Germany the influence of the teachers has a very great effect in framing the patriotic spirit of the nation, and we should look to the same end in England.

The Existing Military Training for Lads.

Largely owing to private patriotic initiative, and lately to the attitude of the Education Board in introducing physical training and drill, and the action of Lord Roberts, Lord Methuen, and other public and patriotic men, we have made some start in this matter. For years we have had in the upper class schools Cadet Corps of varying popularity. The late war, with its results, and the awakening of the school authorities to the needs of the country, have much increased the School Corps. At the public school field-day in 1904 Repton sent fifty per cent. of its boys into the field as efficient Volunteers, which meant that almost every boy of suitable age was serving. For years there have been Cadet Corps attached to certain of the well-known Volunteer Corps.

The country is studded with such bodies as the Church Lads' Brigade, Lord Meath's Lads' Drill Association, etc. That is to

say, private effort is doing what the nation should undertake. The influence of these bodies referred to should have largely served as the pioneer of more comprehensive measures.

It is well to remember that all young men in the training colleges for schoolmasters are compelled to serve for two years in the local Volunteer Corps, the larger colleges having their own companies. St. Mark's College was prominent in this movement, when, so early as 1867, Canon Cromwell, the Principal, took the lead in starting it. That is to say, that all schoolmasters in provided and non-provided schools who have had a college training have been efficient Volunteers. That many of them fail to keep it up is probably due to preventable causes, which will disappear as it becomes the fashion for men of their cloth to be patriotic leaders.

2. THE PROPOSED SYSTEM.

The schools of the country may be classified for our purposes into two broad divisions—those that retain boys till they enter one of the professions, and those that release them as soon as they have attained the minimum education required by law.

The schools or other educational establishments that come under the first category can train all their boys exactly as the members of the Volunteer Cadet Corps are trained. If it were law that every lad had to have a certain military training, all schools that had sufficient numbers would have their own Cadet Corps, and those that had not could without difficulty join local Cadet Corps.

The difficulty of any system comes in with the classes who require a much shorter education and whose boys leave school at the time when their more valuable military training would be beginning. Children by law leave school at fourteen years of age, and can be "half-timers" at twelve, provided they have attained a certain standard of education. The difficulty must come in retaining a hold on the boys who leave at fourteen. It is suggested that the Board of Education, the supreme educational authority in England, should undertake the enforcement of compulsory military training as outlined below, in school companies, known as the "National Cadet Service" or some such name.

Public Elementary Schools.

The regulations regarding the compulsory training of lads must vary considerably for the two broad natures of schools referred to above. The principle of compulsory training will be universal; the conditions of its application must vary. Dealing first with the case of boys in the ordinary provided or non-provided schools, the following rules would hold:—

Every school in the above category would have its company or companies, according to its numbers, of the "National Cadet Service," the companies being known by the name of the school. Each company would be commanded and officered by masters of the school (*vide* objections below), who would receive special salary, be given a suitable uniform, and a commission in that force carrying the right to be present at public ceremonies, etc.

Up to the age of thirteen¹ every boy would receive physical training in the infant portion of these companies, on the same lines as now laid down by the Board of Education. At the age of thirteen—a year before the boys, as a rule, leave school, either as whole or half-timers—they would join the Cadet Company proper, in which they would be required to attend a certain number of drills annually, and to fire a certain course on a miniature rifle range.

The lads would belong to this company, with facilities for transfer to the Cadet Company of whatever school district they may move to, till a certain age, seventeen or eighteen, and would have to attend on certain days for drill and shooting. That is to say, the half-time principle which obtains for education under certain conditions between twelve and fourteen is extended to the higher age, so far as exacting this attendance for military training. Every lad becomes, not a half-timer, but a tenth or fifteenth-timer, till the age when he is free. By transferring a boy to this company at thirteen years—a year before he leaves the school—the spirit of the school and the influence of the teacher in the Cadet Corps is to some extent secured.

The points to be settled and the objections to be met would be much as follows. It must first be pointed out that the various details resulting from the acceptance of such a scheme cannot possibly be worked out in an essay like the present. Far more knowledge of the details of school life and the possibilities of each district than a soldier writer possesses are evidently required. Once the conditions on their broad lines have been accepted, the working can be gone into and the details arranged with regard to all the conflicting interests that have to be met. The working rules might obviously have to be modified to suit the mode of life in different districts.

It is always urged against a scheme of this kind that arrangements must be made with employers of labour. This is absurd. If it is the law that lads up to eighteen have to attend a certain number of drills, the employer will have no option. He may be inclined to pay a lower wage till a lad is free; but that is a different matter.

The Staff.

First to be considered is the question of the staff. All teachers may not be able to qualify for the command or otherwise of their Cadet Companies; but bearing in mind that many when training are Volunteers, it will only be necessary to give them facilities to become fit for them to obtain the qualification. The labourer is worthy of his hire, and the extra salary to be given would induce men to become qualified. It will not always be possible for the teacher to command the company, and an outside man might have to be introduced, preferably an officer of local Volunteers. The position of an officer in the "National Cadet Service" must be made one of honour.

The inspection of companies would have to be provided for, and it is suggested that the inspector should be a retired Army officer, or an officer of Volunteers, who, appointed by the Board of Education, should be responsible for reporting on the efficiency of the companies,

¹ Some authorities consider that boys of 12 can begin military training. This detail should be given further consideration.

each inspector having all schools in a certain district. The Director of Auxiliary Forces should also have the right of inspecting the cadets and bringing failings to the notice of the Board of Education.

The appointments of these inspecting officers should be in the hands of the Board of Education, subject to the Director of Auxiliary Forces being consulted as to the suitability of the selections. A very high standard of military knowledge would not be so valuable a qualification as a man of zeal and tact.

There would have to be a paid non-commissioned officer to each company to assist in drill and training under the company commander, whom the local educational authority would appoint, subject to the approval of the local military authority as to the candidate's qualifications. It need not follow that this man should be a man of the Regular Army. The local educational authority would also nominate the officers from the teacher staff with the final approval of the Board of Education, on whose recommendation these officers would receive their commission in the National Cadet Service.

The Cost of the Cadet Service.

The most important point is: Who shall pay the cost of this organisation? At first sight it would seem that while Government should provide ranges and drill accommodation from Imperial funds, the actual expenses of salaries should come from the education rates. The objection to this, however, is that rates are already so high, and only fall on householders, that they should not be further burdened. It would seem, therefore, best that the money should come from Imperial revenue in the form of a grant.

The principal charges to be met would be:—

- a. Payment of cadet officers: Perhaps fifty pounds a year to company commanders and thirty to company officers with the pay of a sergeant for each company, who would keep the attendance rolls and issue notices to attend.
- b. The cost of drill halls: With the fine buildings in the schools and their grounds, and arrangement with local Volunteer authorities, this item in many places would be *nil*.
- c. The cost of a certain amount of time in camp each year, and in the summer the move by train to open country.
- d. The provision of miniature rifle ranges (see paragraph ahead on Rifle Clubs).
- e. The provision of such uniform and equipment as may be considered necessary, probably light rifles of the pea-rifle type for cadets under sixteen and carbines for lads over sixteen, or else according to physique, while for uniform a forage cap, with distinctive badge, and water-bottles and haversacks would be all that would be required.
- f. Uniforms for the company officers and sergeant-instructor.

It is obvious that the yearly cost of the above scheme would not be very excessive; perhaps two hundred pounds a year per company, exclusive of inspecting staff, and each company might very well be a hundred and fifty strong.

The provision of rifle ranges would be mixed up with the question of Rifle Clubs, which will be discussed later.

Other Schools.

We now come to the other class of school, those to which the gentry and well-to-do classes send their children, and in which boys do not leave till they are from 17 to 18 years of age. For them it is proposed that every boy must either join the National Cadet Service Company of the district to which he belongs, or else a Volunteer Cadet Corps. The inspecting officer of National Service Cadet Corps already referred to would be responsible for seeing that the military education of boys at such schools was provided for. In schools that have Cadet Corps there would be no difficulty, while boys of those whose numbers will not allow of their starting a corps of their own will have to join the local Volunteer Cadet Corps. The authorities will have to provide for the formation of Cadet Corps and companies of ordinary Volunteer Corps in those places where there may be none.

The law that ensures that every boy in the country gets the legal minimum of education, and that therefore ascertains that those who do not send their children to the public elementary schools are taking steps for their education, can equally well ensure that each boy is doing his military course as well. We should have to have an elastic code to govern the cases of those who wish to educate their children abroad or move them from one part of the country to another. These are all matters of detail, easy of settlement, if the general principle be admitted. The whole matter is emphatically a case of where there is a will there is a way.

For the favourable views of headmasters of schools on Cadet Corps, see a lecture at the R.U.S.I., published in the JOURNAL for February, 1901 (No. 276), by Rev. C. G. Gull, M.A., Captain-Commandant, 4th London Rifle Volunteer Corps, and headmaster of the Grocers' Company's School.

No attempt has been made to enter further into details, because it is obvious that a writer of an essay in the space of a few months, cannot cover the ground which a dozen select and other committees will have to go over, with all the facilities of calling evidence and expert assistance. It is only possible to enter on broad principles and show that the difficulties will not be insuperable. In the writer's eyes nothing is possible at present that is not done with the hearty assistance of the Education Board and their County Councils and the educational authorities that they constitute.

Criticisms.

It may very well be urged by soldiers and by an enthusiastic body, such as the Council of the National Service League, that the measure of training obtained by these proposals will be trivial, and that discipline will be *nil*. The answer to this is, that the country will certainly accept only very trivial liabilities, and that a scheme such as outlined will give very great results in places where personal influence and zeal are brought to bear, and on more barren soil will give of course less, as in every other matter of life. It will lend itself to considerable

development, if needed, as popular opinion gets used to the principle. For instance, if the influence and control of the teacher officers fail or further efficiency and training are desired, it will be a less step to transfer lads at sixteen to companies on similar lines, that have a larger and powerful military staff, than it will be to inaugurate even the mild form of training herein advocated. The novelty of to-day is the common-place of to-morrow, and once men have got used to the proposed idea of compulsory training, its improvement would not involve a new departure. It would, of course, be necessary for the Board of Education to start a small Military Department under some soldier of not too high rank, to assist them in carrying out the scheme, but it will be advisable to obviate the War Department having aught to do with the training. It should content them if they find that lads coming to the Army, or joining the Auxiliary Forces, or available for special corps in time of war, come with some idea of military service and some slight education in the military history of the nation and the sacrifices in the past that individuals have made of self for the sake of country. A headmaster of a public elementary school, who has given the writer the benefit of his views on the subject, urges strongly that the history of the nation, devoid of the criticisms of historians, and the controversies of survivors, should be regularly taught in schools, with the attractive side of gallant deeds for a cause specially dwelt on. His views must be agreeable to all who wish for the development of the national spirit in the youth of England.

To those who urge that the foregoing outline is inadequate and trivial, the proposals of the National Service League and Major-General Sir Edmund Barrow, already referred to, are recommended for consideration. The moderation, the excellence and the wisdom of the principles in the former and the details in the latter will be accepted by all who have given the subject a thought, but who is there that believes that the country, till somebody frightens it again, will ever consent to such proposals? The scheme put forward here endeavours to carry the great power in the country—the Educational authorities—with it, and enlist their sympathy and that of the clergy, for, if it be possible to awake everyone in England to a sense of duty, our voluntary forces will give us all that we can possibly require. The inculcation of a well-directed military spirit at school must act for the good, too, of the Regular Forces and the Militia, by sending boys to their ranks. The proposals of Sir Edmund Barrow, and the programme of the National Service League, whose functions and good labours will only be beginning if the proposed scheme came into being, are given in brief, so that we may reflect if the country is prepared to give, or any ministry to put forward, even so moderate a scheme as these.

The Proposals of the National League.

The National Service League has for several years now, under the presidency of the Duke of Wellington, been endeavouring to instil into the nation, by means of influential and widespread local organisation and sub-committees, the dangers of our present conditions, and the need for every man to serve his country. At one time, when the influence of the South African War was strong, their platform included a National Army, in which every man should serve for a period. This far-reaching programme has now been modified for the

following proposal, which the League now puts before the public as a minimum:—

- I. That physical training in schools should be compulsory up to the time of liability for military training.
- II. That every sound man of military age be liable to training in a National Militia, resembling that of Switzerland, naval as well as military in character.

Sir Edmund Barrow's Scheme.

Major Sir Edmund Barrow's scheme (*vide* the October, 1904, number of the *National Review*) outlines a scheme of very mild National Service from a compulsory cadet service of some stringency.

Its provisions are as follows:—

The establishment of an Imperial Militia, recruited by voluntary enlistment, liable to foreign service, and, in addition to existing forces, with a regular staff of permanent army officers.

The subdivision of the country into battalion districts, to which each battalion of Imperial Militia would belong. The compulsory training of lads at school till they were 17, when they would come into cadet companies distributed through the battalion districts, and be trained under certain conditions for two years by the permanent officers and staff of the Imperial Militia Battalion. This training would consist of classes and trainings given locally for the winter months, and a month's training in camp in the summer. On reaching the age of 19, the lad would have to accept military service in some form, the lowest he could choose being the reserve of the County Militia as that force now exists. Such reservists would have no pay, and undergo no annual training, but would undertake the liability to be called to the colours of that force for Home Defence.

The essence of the scheme is the formation of the Imperial Militia as a force available for service abroad when required, with a staff of Regular officers available, to train lads for the eleven months of the year that the Imperial Militia was not out for training.

Sir Edmund's scheme is worked out thoroughly, and, as an ideal scheme to suit our needs, to be carried out with a blank cheque on the feelings of the country is admirable, but demands more from the individual than the country will dream of giving, and takes more of a lad's time than the nation will at present allow. It does not provide for the thousands of boys who leave the public elementary schools at 14, and are thus free of all training between the impressionable years of 14 and 17.

PART III.

VARIOUS COGNATE MATTERS.

1. *Rifle Clubs.*

When Lord Roberts this year endeavoured to rekindle the public interest in the matter of Rifle Clubs, the *Standard* raised the question of why Rifle Clubs have failed? and many interesting replies were received. The ephemeral interest in this matter, which stirred our careless nation after the humiliations of the last war, has fast died out among the mass. Patriotic men started these clubs with funds

and ranges, and from that day to this the attendance and number of members of these clubs have dwindled yearly.

The reason is simple enough. Rifle shooting is not amusing, and much time and some trouble have to be spent in it. The story is the old one, men will not learn to shoot for duty's sake alone.

In the same way that Volunteers must be attracted to the ranks so must Rifle Club members be amused. They even demand prizes as incentives.

There are various minor troubles. Ammunition is dear. Government, it is alleged, charge considerably more for ammunition than private firms, instead of less. Real ranges are hard to come by and expensive to reach. Miniature ranges are lit artificially and are dreary and trying to the eyes.

Some clubs, owing to the fact that men who would otherwise join the Volunteers content themselves with joining the Rifle Clubs, therefore, bar all members between 17 and 35, unless they are also Volunteers.

Lord Roberts has appealed to the nation for funds to build miniature ranges. Many men have urged that every Englishman, for a period of his life, shall yearly attain a certain proficiency.

As we stand at present, it seems that the only way is to trust to time and precept to make men study rifle shooting as the first claim to be called a man, and an Englishman. We must, therefore, try to make it popular, as well as urge it for duty's sake. The Honorary Secretary of the Highgate Rifle and Sports Clubs has brought a valuable point to notice; he draws attention to the fact that at every seaside place, frequented by holiday folk, and every open-air place of amusement, shooting galleries innumerable flourish, and are most popular features, in which variety of target is the usual attraction. According to him, a miniature range proprietor he knew of in North London, had taken half a million pennies at a penny a shot in six months, so that it is clear that rifle shooting in some form is a popular amusement with a considerable section of the population.

It would further appear that as far as towns are concerned, the miniature rifle ranges used by the clubs should be in the parks and open spaces, so that men can shoot in the finer months in the open or partly so, and their women-kind look on after the fashion of the "Wappenschaw," while where mounds, excavations and other back ground is available, the targets should be of an interesting and varied nature to develop the snapshooting taste and faculty.

The Rifle Ranges for the National Service Cadets.

The National Service Cadets will require rifle ranges, and it would be desirable that these should be constructed so that they may be available for use of Rifle Clubs, while the Cadets in the final stages of their training would go to the nearest military or Volunteer ranges for a short course. It will assist both the cause of Rifle Clubs and that of the Cadets if the same ranges serve for both.

It is very much to be questioned if it is as yet feasible to insist on citizens joining a Rifle Club. That may very well come when the National Service Cadet system has prepared the public mind, but it is hoped that the spirit that this service will instil, will cause many to keep up their rifle shooting voluntarily in a way nothing else short of compulsion will do.

It must be remembered that the aim of Rifle Clubs is not, as some erroneously urge, to furnish hedge riflemen to die in the last ditch in Merrie England's time of trial, but to ensure that the civilians, flocking to the wars as they flocked in the days when the war in Africa was fashionable, shall come to the ranks with a slight acquaintance with a military rifle. That this is very desirable would appear to any one who had seen, as the writer saw, an Irregular soldier a month in the ranks engaged in a fight with the brethren, in South Africa, hastily reload his empty magazine by stuffing cartridges into the oilrag recess in the butt of his rifle, whereat the writer cuffed the trooper's head.

2. *The Matter of the Navy.*

The proposals which have been put forward deal with so little more than instilling elementary ideas of discipline and training in the youth of England, that no reference specially to the Navy has been made. The recruiting of the Navy is such a very different matter from that of improvised armed land forces, that its supply is hardly affected by the training in schools. The Naval Reserve, that the fisher and longshore folk serve in, will be none the worse for the discipline that its members will have learnt when serving in the Cadet Corps. It should be a matter for consideration by committees that must work out the cadet scheme, whether or no certain schools, notably those in the coast and seaport towns, should not be run on a naval rather than a military basis, while there is no doubt that sailor petty officers and ex-coastguard men make excellent instructors for lads with a great power of inspiring discipline, and might even be employed with advantage in companies organised on a military basis.

3. *The Number of Wastrels in England.*

Earlier in this paper reference was made to the number of rejections of would-be recruits in the last year, viz., 24,658 rejections out of 71,698 candidates for enlistment, between 1st January and 30th September, 1904, or 34.39 per cent. This is no new thing, for between 1893 and 1902, out of 679,703 candidates, 234,915 were rejected, or 34.6 per cent. There are now many officers of experience who say that the test is not severe enough, and this is borne out by the number of draggled invalids that stream to the rear from the day a campaign opens, while in the period above referred to, besides the actual rejections, 5,489 men were discharged as unfit within three months of enlistment, and 14,529 were discharged as invalids within two years.

In addition, every recruiter is bound to refuse to bring a good many applicants before the doctor, as manifestly unfit for the service.

Now the fact that the country has moved to the towns, and the children of thousands are bred and brought up in conditions that absolutely prohibit healthy development, means that the nation must take up this matter quite apart from any idea of compulsory training. How are children to work at school when starved is a very crying question in the poor districts of great towns.

How is the unemployed man, the wastrel, whose only faculties seem to be those of procreation, the countryman, who, in the town, can but get the sweat wages of the poorest class of unskilled or casual

labour, to make his children fit citizens of a free country? The thing is such an impossibility that only by wilfully putting the question from him can the well-fed Englishman allow the present state of things for a moment. The State feeding of many classes of children is the means which even already we have had to undertake to a small extent, and will have to carry out far more widely. It will also be a matter for direct consideration in connection with the National Cadet Service scheme. It is ill-drilling in either military or physical exercises a more than hungry lad.

The difficulties in connection with this subject are considerable, as the public naturally fear to relieve lazy and irresponsible people from a burden that nature has intended for them. But the matter is so vital that a means must be found.

In this connection it is a profitable reflection that the hundreds of millions of good English gold that the war in South Africa cost us would have provided fifty times over for some of those wide-reaching philanthropical schemes of national importance that are always shelved by reason of their expense, viz., the rescue of slum children, the pension of the aged, and many more. The point is, not that the war was unnecessary, but that millions for a national service are not so hard to come by if the nation's heart be willing.

Why should wealthy England permit a wastrel to be bred within her boundaries?

4. EXISTING INSTITUTIONS.

In carrying out the scheme of a National Cadet Service, it will be eminently desirable, as well as gracious, to recognise, if possible, the good services that the national pioneers of universal training have performed. The various existing cadet corps, both of the schools and of the districts, which have been attached to Volunteer Corps, will remain and be extended so that the good work they have done will stand and continue. It will be necessary to arrange that boys attending public elementary schools, who belong, or prefer to belong, to Volunteer Cadet Corps, shall be permitted to do so instead of serving in the School Company, provided they produce efficient certificates to show that their period of service in the Volunteer Corps will be as long as in the School Company.

The recognition of the work done by the Church Lads' Brigades, the Lads' Drill Association, and kindred bodies, is not so easy, but it seems that the former might easily be expanded into that portion of the National Service Cadets which will be found by the non-provided schools of the Church of England. In some of these latter the assistant clergy, who organise the Church Lads' Brigade, may become officers or company commanders. It is essential that their support shall be secured in the good work they have done so much to institute.

PART IV.

A BRIEF RECAPITULATION OF THE ESSAY.

As the conclusions and proposals resulting from the foregoing are scattered through many chapters, they are brought together now as briefly as possible.

First, it is assumed that the Nation will not tolerate any but the most trivial form of compulsory training, till she be again badly frightened, and is also very averse to any great change in her time-honoured military forces, whether they be obsolete or no. The only course then seems to be to accept this and do the best we can with the existing conditions.

The definite conclusions of the Defence Committee with regard to the question of invasion, which have been accepted by the Government, give us our first authoritative standard to work up to.

In continuance of this conclusion, that invasion, other than an attempted raid, is impossible, and that we may want big forces abroad, it is put forward

1. That the Army (whether it be stationed at home or abroad) must be almost entirely available for service in the field, and that its scattered foreign garrisons must all have an allotted place in brigades and divisions that will rendezvous for war.

2. The first duty of the Militia is to take the place of Regular troops abroad when a war is afield. This would include India and be a legal liability. It must also be prepared to send Volunteer companies to the line, and even to volunteer to take the field as units.

3. The duty of the Volunteers and Yeomanry is very clearly marked. A considerable portion will be entrusted with almost the entire duties of Home Defence, with a Regular nucleus, which will be replaced by them or by Militia as they become efficient by embodiment. This portion of the Volunteers must have a sufficient permanent staff to overcome the working difficulties of taking the field inherent to the system.

The remainder of the force is to be as numerous as possible, and in common with that portion detailed for specific duties in connection with Home Defence, to exist to train the citizen as a soldier. Further, to have for its creed, and be organised for the purpose of, the provision of companies and composite battalions of those who are free to serve in war time with the army, and thus providing the machinery with which the Nation expands its forces, and the school in which it prepares for the great eventualities of war. The Yeomanry will perform for the mounted arm what the Volunteer force does for the others.

The report of the Norfolk Commission alone shows how very much can be done to make very much more out of this force than it has been possible to do up to date, and how rapidly it will respond to sympathetic treatment. It is perfectly clear that in the past we have not had full value from either Volunteers or Militia, and the report of this Commission has already helped the Army Council to remove many of the minor bars to efficiency.

4. The duty of the people of the nation is also clear enough, and that is to flock in their youth and strength to such of the forces of the Crown as suits their condition of life, to help in every way the time-expired Regular soldier, who has borne the burden of foreign service and an irksome discipline for them, and to understand the principles that underlie the nation's greatness and its defence. Lastly, and greatest of all, to train its lads in the civilian schools of the country, under the guidance of the educational and religious authorities, so that a patriotic spirit and the elements of self-control, of military training and of rifle skill may be instilled into every boy, the

better fitting him to join the defensive forces of his country or to volunteer for a war in the time of trouble.

A century ago the country fought for its liberty and that of Europe for a score of years and more, and since human nature and human aims are the same now as when Rome wrested sea power from Carthage, and then, combining the empire of the sea with military power, extirpated her adversary, so are we bound some day to have to struggle for our position as a mighty people. Let us read the writing on the wall while yet we may, lest we too be "weighed in the balance and found wanting."

India, August, 1905.

The attached Appendix gives various figures connected with our national forces that may be of use in reading this essay.

APPENDIX I.

Recruiting and establishment *data* for general reference (chiefly taken from the Report of the Director of Recruiting and Organisation, 1904):—

Recruiting.

Recruits for Regular Army from 1st January, 1904, to 30th September, 1904, were 41,279. Total number medically examined, 71,698, rejected, 24,658, or 34·39 per cent. Also between 1893 and 1902, out of 679,703 candidates for enlistment, 234,951 were rejected as unfit, or 34·6 per cent. Further, during this period 5,849 men were discharged as unfit within three months of enlistment, and 14,529 were invalided within two years of their enlistment.

14,932 Militiamen joined the Army between 1st October, 1903, and 30th September, 1904. In the four years and nine months following 1st January, 1900, no less than 70,803 men from the Militia joined the Army.

Strength and Establishments.

The establishment budgeted for the year 1905-6 was Regular Army = 221,300.

Militia on 1st October, 1904, were as follows:—

Effective	...	...	...	...	86,491
Establishment	...	...	...	...	123,510
Deficiency	...	...	...	...	37,019
Decrease in numbers since last year, 3,252.					

Strength by arms:—

Infantry	...	...	...	...	70,421
Artillery	...	...	...	...	13,352
Engineers	...	...	...	...	2,020
R.A.M.C.	...	...	...	...	698

Yeomanry:—

Effective	...	...	...	...	25,502
Establishment	...	...	...	...	25,752
Deficiency	...	...	...	...	250

Volunteers:—

Effective	...	...	...	...	254,412
Establishment	...	...	...	...	343,679
Deficiency	...	...	...	...	89,267

Statement of Auxiliary troops sent to South Africa:—

Supplied by the United Kingdom:—

Militia	...	...	...	...	51,000
Yeomanry	...	...	...	...	36,000
Volunteers	...	...	...	...	20,000
South African Constabulary	...	...	...	...	7,000

114,000

Supplied by the Colonies:—

India	...	...	...	...	300
Over-sea Colonials	...	...	...	...	30,000
Enlisted in South Africa for the Irregular					
Forces, or supplied from local corps					52,000

82,300

Grand total 196,300

FOURTH SPECIAL MILITARY ESSAY, 1905.

Subject :—

“THE BEST, LEAST IRKSOME, AND LEAST COSTLY METHOD OF SECURING THE MALE ABLE-BODIED YOUTH OF THIS COUNTRY FOR SERVICE IN THE REGULAR OR AUXILIARY FORCES AS EXISTING, AND FOR EXPANDING THOSE FORCES IN TIME OF WAR.”

By Captain S. C. BIRCH, h.p., late Northumberland Fusiliers.

“ Holdfast

*The friends thou hast, and their adoption tried,
Grapple them to thy soul with hooks of steel.”*

SYNOPSIS.

THIS essay begins with an analysis of the subject to determine what line should be taken. A very brief description of the existing forces is given, where they serve, and the duties which may be expected of them. The terms of service which will be suitable for each force are given. I sketch a military organisation for the existing forces based on the territorial principle, the Regular Forces being left practically as they are. I show how almost all the Regulars are required abroad at once on the outbreak of a war, and how the Auxiliaries should be organised for defence. Then I discuss methods of getting recruits voluntarily for the forces, but show that the suggestions for voluntary enlistment must be backed up by compulsion. Advantages given to Service. Proposed Defence Laws as a basis on which to work. Division of the country into equal areas. Detail of method of obtaining recruits in the areas. Methods of expansion, the system being that of filling up units and not the endless creation of new units. A short study on the provision of officers, the numbers necessary, and other suggestions. I end with my reasons why the views taken by me should fulfil, if carried out, the end desired by the title of the essay.

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CHAPTER I.

We can none of us too strongly impress upon ourselves the value of our old and existing institutions. They have grown with the growth of the nation, they are part of its life blood. In some ways they may not appear to be in every respect suitable to the present conditions of national life; but this is more in details than as a whole, and that is no sufficient reason for wishing to discard them wholesale. Our greatest poet has told Englishmen a similar truth in the well-known lines quoted above.

It is perhaps one of the most hopeless tasks which a writer can undertake to appraise at its true value contemporary history. The effect of events is absent, while there is so much which is so hopelessly out of focus that he cannot distinguish its exact outline or grasp how it will fit into history when seen by the impartial eye of posterity. The casual and perhaps sometimes carping critic is so often much too apt to forget that there is possibly really something very good in that which exists, but which seems to him to be only the results of the vapid strivings of an inane community. Or he may judge as perfect the invention or the results of the continuous labour of some one very strong man who carries with him for a time the flood of popular opinion. The critic is also very prone to imagine himself the director of some unattainable society in which everything should work out in accordance with dictates of his will.

Feeling these truths very strongly, I fear that I am almost certain to fall hopelessly into the very pitfalls which I know to exist, but which in the blindness of pride I cannot avoid. This must be my apology for treating, as I do, the complicated subject under discussion, which, in fact, amounts to constructing a method for putting new life, energy, and strength into our old friends, the Regular and Auxiliary Forces as they exist.

ANALYSIS OF THE SUBJECT.

Perhaps it may not be out of place here to give an analysis of the subject from the writer's point of view, as it can only be by some such detailed consideration that the subsequent deductions can be fairly weighed.

What is wanted is a method of securing the services of the male able-bodied youth for the existing defensive forces, but the method

must be capable of expansion, and it is qualified by three very important provisos: It must be the best, the least irksome, and the least costly. Now the best method. This means as regards the nation, the most certain and efficient; but as regards the individual the best would certainly include the least irksome, while in one sense the best in the long run, both for the nation and the individual, will certainly include the least costly; or, other things being equal, the less that has to be spent out of the national resources on naval and military Services which are unproductive, the more there will be available for productive enterprise.

The least irksome. This will naturally be taken to mean the method which interferes least with the natural bent of each individual in the country; thus it follows that if the method introduced were so framed that the natural bent of each individual was towards service—as it is in Japan—then there would be no hardship at all. We may weigh the degree of irksomeness of any method in several ways. For instance, we may consider it light if it only interferes with very few members of the community, or should the service adopted be so short, and the standard of efficiency be so low, that the time demanded was very small, then the weight is very small on each individual, though to a certain extent it will bear on everyone.

As regards least costly. Here we come to a most knotty point in political economy. What is cost? Is it to be considered in this case as merely money spent by the State for its defence, which must include, to be of any use, the power of offence, or must it also include all the time wasted (if it be waste of time) on unproductive work by the individuals in the State? If we look at it from the first point of view, that of actual money spent, we must allow that our present system is very expensive, as far as our Regular Forces go, while if we consider it from the standpoint of the mis-employment of productive labour power, the Regular Forces are at present very cheap, since large numbers of the men who are now enlisted are greatly wanting in brain power and physical development, and therefore incapable of steady productive work. These deficiencies may be caused by defective moral training, and also in some cases by the want of sufficient good food. Here the discipline of the Navy and Army does to a certain extent make up for the want of previous moral training, and certainly the development of the physical powers of the youths are attended to, and they are given the necessary nourishment. So in this way the money which some would consider to be wasted is well spent on producing in the nation improved material for subsequent productive labour.

The Volunteers give the country the most marvellously cheap military material, as they only direct the superfluous energy of their members, which would otherwise be wasted or expended on recreation or sport, into the channel of military training, and therefore no productive effort is lost; but at present they are not considered to be fit for war, and unless fit for war, even the small sum spent on them is wasted.

The Militia, coming, as it were, in between the Regulars and Volunteers, probably misses most of the good points of both the other branches of the Service; but in the Militia alone we find the two secrets of military power, hidden, as it were, in a vault. These are the true territorial spirit and the ballot. The Militia, though pos-

sessing great potentialities, is, through not being thoroughly efficient, expensive.

Again, if a certain amount of work has to be done, there is not much difference in the expense, as regards loss of productive effort, if it is done by one man for twenty years or by twenty men for one year; but when we take large numbers we find that the effect on the nation is different; the latter will produce a nation of useful men trained to arms, while the former produces a class of pensioners, perhaps loafers.

To sum up, it may be said that the best method must be the least irksome, and that an indifferent system must be both irksome and costly to the State, since the money or labour, or its equivalent in time, which is spent on this bad method must be wasted as the results are certain to be inferior, unsatisfactory, and a discredit to all concerned.

So much for the title, which has certainly shown that the best system is what is wanted, since what is best must be the least irksome and least expensive in the long run, even though the apparent burdens to the individual and the State may seem to be heavy, both as regards the restriction of the liberties of the subject and the actual money outlay.

Social and Political Aspect of the Subject.

It is of course essential that the consideration of this subject should be absolutely free from any political, party, or social bias; or that any other object than the general good of the country should be considered. Still, all the conditions can scarcely be fully, fairly, and impartially weighed, unless account be taken at least generally of all the existing circumstances of the country. Politics must form a very important element in these conditions, while party politics will with us always also answer for a great deal. For many purposes it has been found that a party cry is a more important factor than the demand of all parties for real national efficiency, the latter wanting the backbone of an organisation; but it would be a thousand pities if the improvement of the martial forces of the nation were dependent on the action of one party and not the joint action of every party.

There are so many shades of opinion in each party that there is no hope of any very radical proposals as regards Army administration and organisation being readily accepted by all; but some middle course, such as the improvements indicated by the title of this essay, may stand a fair chance of approval by the moderate sections of all parties, and thus be carried out eventually. It may be said that every British institution has been built up by compromise out of precedent.

The extreme Jingo would like to see much more drastic steps taken than those which will hereafter be suggested, whilst the socialist, who would do away with national wars, and probably also law and order, by the extinction of all armies, cannot be expected to approve of suggestions by which, even under the most remote chances, he might find himself compelled to be a soldier.

When we consider the conditions of life and society in England, Scotland, Ireland, and Wales, we see that they are not exactly similar, that the laws which at present govern the several countries are not the same, and that in the various countries the laws are not respected to the same extent. It is therefore probable that suggestions which might be acceptable in England would require some

slight modifications in detail in their application to the other countries to suit the peculiar local conditions. It is, however, most important that the general principles should be similar and applicable everywhere.

The chief local military difference is the large development of the Militia in Ireland and the absence of any form of Volunteers, except two regiments of Yeomanry. It is a condition of affairs which must be accepted by any would-be organiser, however much he may feel that perhaps the very fact of a country having its population treated by the Administration as dangerous lunatics, reacts indirectly on that population and causes an apparent want of stability in its actions.

CHAPTER II.

Existing Forces.

So far we have only dealt with generalities, and as it were, cleared decks for action. It is now necessary to be as exact as the space at our disposal admits. The numbers, which have all been taken from the Navy and Army Estimates, have been rounded for convenience in further calculations.

The following is a brief statement of the existing forces of the country; these, if organised, would now be available for war:—

Table A.

	Existing.	Establishment.
The Navy (including Marines) ...	129,000	129,000
Naval Reserve (probably available)	35,000	60,000
Regular Forces at Home ...	137,000	137,000
„ „ in Colonies ...	73,000	73,000
„ „ in India ...	75,000	75,000
Army Reserve	75,000	75,000
Militia	86,000	126,000
Sundry Services	10,000	10,000
Yeomanry	27,000	27,000
Volunteers	245,000	343,000
	892,000	1,055,000

The above is really every man available for war in the Empire, except the Indian native army and Colonial forces, which, though most valuable assets, are beyond the consideration of an essay such as this.

A supply of young men is annually required for a certain proportion of these forces. For the purpose of calculating the number of recruits required, I have further rounded the numbers, the increases and decreases nearly balance in the total; this does not affect the argument:—

Table B.

Navy (including Marines)	150,000
Regular Army at Home... ..	140,000
Regular Army in India and Colonies	150,000
Militia	120,000
Yeomanry	25,000
Volunteers	275,000
	860,000

This number could easily be maintained if the existing units were kept up to a very moderate establishment, as I hope to show later. The force provided for on Table B is larger than that existing at present, as both the Militia and Volunteers are very much under their estimated strength; but it is much smaller than the present forces would be if these branches of the service were fully up to their establishment. The Navy is shown increased, but its growth during the last few years seems to warrant some provision for future growth. It will be noticed that the Reserves are omitted from Table B, as these automatically receive their strength from the overflow of the forces, when the men have served their prescribed time in the latter. The Reserve is only drawn from the country in case of war. When war does occur, every branch of both services requires a Reserve, and not only the Regular Army, which is alone, at present, provided with any Reserve worthy of the name.

It is obvious from a consideration of the above figures that the existing forces available for war are really large; it is not proposed to treat them as if they were only capable of placing the Navy, the Aldershot Command, and, perhaps, another Army Corps. in the lists against an enemy. They have proved themselves to be capable of keeping over 200,000 men in the field, with only a slight drain on the Navy, without any regular organisation as a whole. With an organisation and an adequate system of securing the services of the able-bodied youth of the country, it appears to me that it would not be asking too much to expect to keep nearly 1,000,000 men in the field. This is a small army, of course, compared with the gigantic armies of the Continent; but, as a backing to a really well-found and well-manned navy, it should be a fairly sufficient and formidable fighting machine, and such as would give the policy of the country weight in the world.

We have next to study the methods that are at present employed to keep the Army full. The system is one of purely voluntary service. The will of the individual being encouraged in the direction of service, either by martial ardour or the high rate of pay compared with the small quantity of labour required, or by the prestige of the position of being a member of some of the service formations. How far does this voluntary system meet the requirements of the country? It would appear only indifferently well if we may judge by results. The Regular Forces do not get the best young blood of the nation and what they do get they take very young. The Militia is not manned by men of a very high stamp, and is 40,000 under strength, while the purely Volunteer branches are about 100,000 under strength, they have no Reserve at all, and the physical standard of the men is not high.

The number of men which we require annually for our forces depends directly on the length of the term of service in each arm, once we have determined the strength of the forces it is necessary to keep up. As in the Regular Forces the terms of service have been continually changing, it is impossible to form an estimate of the Reserve ultimately aimed at by the Authorities. In this essay it is proposed to take, as the terms of service in each branch, what appears to be the probable final views of the Authorities. Length of service should depend upon two primary conditions, which are:—

1. The men should be with the colours sufficiently long to get a thorough and sufficient training.
2. They should serve in the Reserve long enough to make its strength ample for any emergency.

To lengthen the term of service unnecessarily means that fewer men get trained, and this necessitates more service in the Reserve for those who are trained.

We must decide what will be an adequate Reserve for war. No man can really dare place any limit. It should be, and ultimately must be, the manhood of the nation. Politicians may enunciate dogmas about war, and on the possibility of attack or invasion, based on the strength of our Navy and on those of foreign Powers; but history has always found it possible to repeat herself, and every country in the world has suffered from wars and invasions.

It is obviously absurd for Britons whose country has been on and off at war since B.C. 55, and probably before then, to imagine that peace will begin from the year 1905. Given a war, there are sure to be chances of invasion if there is a powerful enemy, and that while we are weak, fortune is not unpropitious to them.

The nation whose manhood will not fight, and will not sacrifice life and treasure for its existence, is not likely to keep its place amongst the first-class nations of the world; it certainly has not the slightest right to such a place. Britons, however, have, in the past, always willingly sacrificed both; but of late years they have not prepared for war in the same proportion as their probable foes have done. They have refused, as a nation, to make any real personal sacrifice until war was actually thrust upon them, and then they have invariably had to pay more heavily than would otherwise have been necessary. They have, then, disliked the process of payment. The sacrifices made to keep up the Navy are pecuniary, being money spent on shipbuilding which actually returns to the country in the form of wages, and have not been in getting men ready to fight these ships.

We must return to our subject and be precise. Our aim is to secure the able-bodied youth for the existing forces, and to form an adequate reserve for these forces, so that they may be able to expand in war. We wish to secure him as a Volunteer; if this is impossible, some form of compulsion will have to be adopted; there is an old saying about taking "the horse to the water," and compulsion pure and simple is very often apt to defeat its own ends, especially if drastically applied.

Before deciding on the terms of service which it would be advisable to adopt, it may be well to consider what exist for each class given in Table B.

In the Navy men serve for various terms, from a few years of non-continuous service to very long service to qualify for a pension, the age of entry varying from mere boys to men of 25 years. In the Regular Army at home it is felt that a short service of about three years should suffice, if this force were not required to be the feeder for the Indian Army, as it has been up to the present. The attempt to bring in a three years' system has so far not been a complete success. Men are now usually enlisted for a period of 12 years, of which from three to ten are spent in the reserve. [For particulars see Recruiting Regulations, 107, and Army Orders 209 ('03), 189 ('04), 7 ('05), 31 ('05)]. Some boys are enlisted, otherwise the earliest age of enlistment is 18, and the limit is 25. Practically almost all the recruits join at the

lowest age limit, as they have then the lowest value in the labour market. The Regular Army in India and the Colonies is still fed by the Home Army, but strong recommendations exist for this force being filled with men willing to serve nine years in the ranks abroad.

Militia.—Militiamen enlist for six years, and may re-engage for four years up to 45 years of age. They may begin to serve at 17.

Yeomanry.—Yeomen enlist for a period of three years, and may re-engage for a year at a time if under 47 years of age.

Volunteers.—Volunteers join usually for three years at a time, and may re-engage up to 55 years of age. Volunteer regulations are vague, and the engagement is really a contract between the individual and the unit.

It will be noticed there is nothing to prevent a man serving twelve years in the Regulars, if he enlists as a boy, before he is 26. Then he may serve say ten years in the Militia, four in the Yeomanry, and six in the Volunteers. He is never more than one unit in the national defence, but 30 years' training will have been expended upon him, enough to have produced at least ten efficient units. Such men do exist, and they are seldom at any time of much use to the country.

We must economise training or we cannot have efficient and sufficient forces and reserves. We should also take our men at the most useful age from a national point of view, and not at an age when they are most useless as soldiers. If we continue to do so we shall waste time and training, which is the same thing as money.

CHAPTER III.

Duties of the Forces.

Before we consider in detail how we are to get our recruits for our forces, it is necessary to briefly consider the purposes for which the various forces mentioned in Table A exist.

The Navy is our first line of defence, and also our means by which we secure our communications should we attack. Without a commanding Navy an insular power is impotent. The first line therefore must be first considered and first served. Its action is necessarily offensive; no Navy can act on the defensive and secure victory. For naval work men require careful and long training. Without a thoroughly efficient and sufficiently numerous *personnel* the most perfect battle-ships are of no more value than scrap-iron. What we require is crews for all the ships and reserve crews of at least equal strength to those of the first line.

The duty of the Regular Army at home is to assist the civil power, to reinforce at the beginning of a war the Regular Army in India and the Colonies, and to form a nucleus of a striking force in any theatre of war at home or abroad.

The Regular Army in India and the Colonies has to maintain peace in those dependencies, to defend them, and to concentrate any available forces in any theatre of war.

The duty of the Militia, Yeomanry, and Volunteers is to form garrisons for the home fortresses, an Army for home defence, and to support the Army in the theatre of war with fresh complete armies, if this be necessary.

The duties above enumerated must be considered when we fix the terms of service which should be adopted in the various forces.

CHAPTER IV.

Suggested Terms of Service for each Branch, and Number of Recruits Required.

The Navy.—I believe it is a fact that for the Navy men must be taken younger than for the other branches of the Service, in order to make them into good sailors, stokers, seamen, gunners, etc. I have taken the peace strength of the *personnel* required as 150,000 to be on the safe side. I will not venture to suggest what time it takes to make a seaman for the Navy, whatever his particular calling may be; but to take an average for purposes of calculation, I would suggest that the average service afloat should be seven years, and ten years' service in the 1st Naval Reserve. That is a total of seventeen years' service. I also suggest eighteen as mean age at which this service should begin. All men who have served in the Navy in any capacity should be enrolled in the 2nd Naval Reserve, and remain in it up to the age of 40.

If we work out the necessary supply to produce the above numbers we find it to come to, roughly, 24,000 men each year for the Naval Services. The term of service suggested will give a 1st Reserve about equal to the peace strength of the Navy and a 2nd Reserve of about half that strength.

Of course, this does not imply that the highest ratings and petty-officers should not be professional long-service sailors, without whom no Navy can probably be thoroughly efficient. There are doubtless some classes where shorter service would suffice, and these would balance in the totals required. The naval details are quite beyond me, but it is essential that there should be an adequate supply of men for the Navy; thus, when dealing with numbers I have allotted 24,000 annually to that Service.

In the Regular Army at home, which is calculated at 140,000 men, the service should average three years. At that the annual requirement to keep the force up to strength would be about 50,000. The service in the 1st Reserve should be nine years, and that in the 2nd Reserve seven years, service beginning at the age of 21.

In the Regular Foreign Service Army it is essential that the men should enlist for a longer term of service with the colours. This is apparently the view entertained at present by the chief authorities at the War Office. The men for this service must intend to make soldiering a profession, and they should receive pay accordingly; there are probably some appointments in the Auxiliary Forces which would be open to some of them later in life. Their original enlistment with the colours should be for nine years, and then three in the 1st Reserve of this force, after which eight years in the 2nd Reserve. As owing to foreign service there will be more annual waste than in the other forces, we must calculate on a larger proportion of recruits; this will work out at about 21,000 per annum. The service in this force should begin at twenty years of age, and they should not go abroad until they have had a year's training.

Next, as regards the Militia with a strength of 120,000, the service should be eight years with the colours and eight years in the 1st Militia Reserve, then three years in the 2nd Militia Reserve.

The number of recruits necessary to maintain the strength given above at the terms suggested would be 17,000 each year, joining at the age of twenty-one. The Militia should receive those soldiers who are invalided from the Foreign Service Army; its permanent staff should be found by the reserves of this Army.

The Yeomanry and Volunteers can be considered as one force as far as the supply of recruits is concerned. The service with the colours in each branch is the same, viz., ten years with the colours and nine years in the reserve, the service beginning between the ages of 17 and 20, if physically fit. Nearly 35,000 men will be required to join these forces annually to give them the necessary strength. In these forces the obligation for service in case of war should be exactly the same, but the amount of training necessary for efficiency should vary with the requirements of the particular arm of the Service to which specific corps belonged, the Yeomanry being Volunteer horse for both the Militia and Volunteers.

We are now in a position to add up the total of the annual draft required from the nation for its forces under the proposed arrangement.

TABLE C.

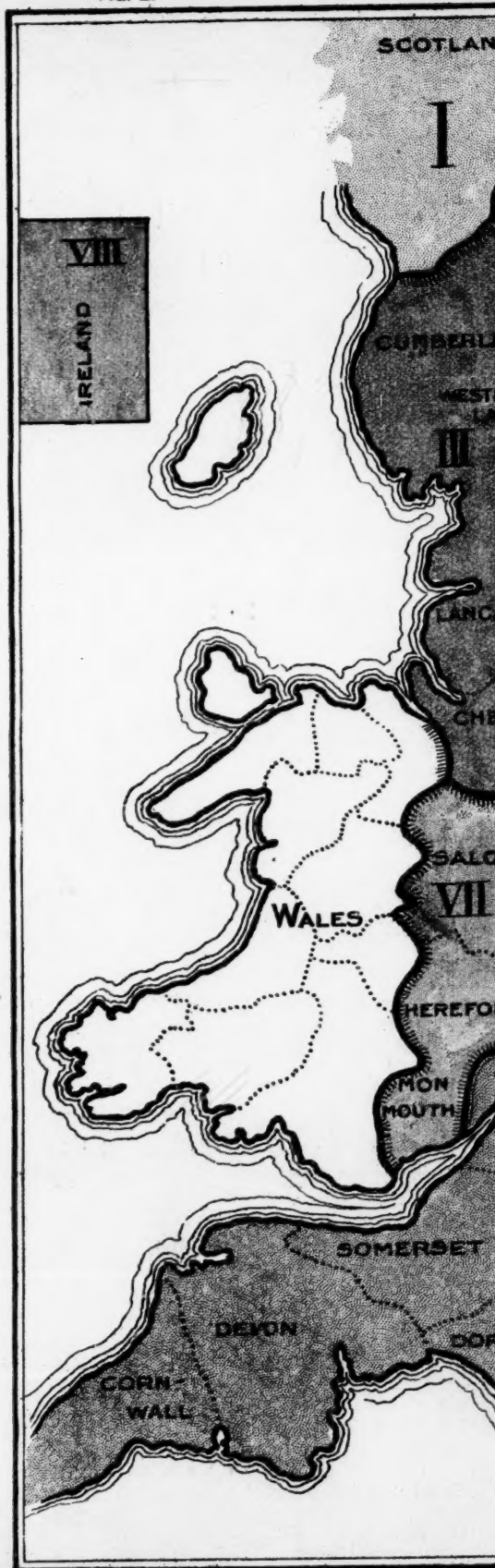
Navy	24,000 at 18 years of age.
Regular Home Army	50,000 at 21 " "
Regular For. Ser. Army	21,000 at 20 " "
Militia... ..	17,000 at 21 " "
Yeomanry and Volunteers	35,000 at from 17 to 20 years of age.
Total	147,000

According to the tables giving the expectancy of life and statistics giving the number of males born annually, about 340,000 youths arrive at the age of 20 each year, a few more at 17, and less at 21. So the demand suggested by me only touches about 42 per cent. of the population, but it does not seem to me to be possible to employ usefully and fairly a larger number. It must be remembered that we in England have no statistics of the number of youths who are physically unfit for service; but it is probably fair to presume that it is not a larger proportion than on the Continent. So we have, in all probability, a very good margin for emergencies. A careful medical inspection will be necessary to eliminate all who are not thoroughly able-bodied.

Table C 2.

Total Forces Available.

—	With Colours.	1st Reserve.	2nd Reserve.	Total.
Navy	152,553	169,368	78,648	400,569
Regulars Home	145,500	339,100	213,900	748,500
Regulars Foreign	152,834	42,798	96,453	292,085
Militia	122,485	95,897	39,525	257,907
Yeomanry & Volunteers	306,180	205,415	—	511,595
Total	879,552	902,578	428,526	2,210,656





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The male population is about 6,300,000 between the ages of 20 and 40, that is during the time for which service is demanded. This means that about one man in thirteen will be doing actual service; one man in thirteen will be in the Militia or Volunteers; one man in seven will be in the 1st Reserve; and one man in thirteen in the 2nd Reserve.

The figures in Table C 2 have been worked out from those given in Table C, and show the exact number which would be available in each class, supposing a constant rate of decrease from death and other causes. A larger rate of decrease has been taken for foreign service than for home service. There is, I believe, an ample margin in these figures to produce the numbers required by Table B, because in them no allowance has been made for the return of any invalid or deserter, and no man who is found unfit for one force is used afterwards in another.

CHAPTER V.

Organisation.

In discussing the question of how to obtain recruits for the existing forces, I would have preferred to have left the organisation of these forces entirely as it is. In the following pages I have only suggested the most necessary changes. It is, of course, useless to arrange for the supply of recruits to what is utterly unsuitable for war; and any system which necessitates the use of any form of compulsory service, and the principle of the man's duty to serve the State, must be based on some definite territorial system, which takes the population of the country as the basis of organisation. I have found it impossible to accept the latest division of the country into commands as a satisfactory solution to the problem, but I have altered them as little as possible. The populations of the areas referred to vary by as much as six millions.

The attached map "D." shows the country divided, to the best of my ability, into areas of equal population. If greater accuracy be required, it will be necessary to add small portions of counties to one area and take from another. Again, only experience and further statistics can prove if those areas will really produce the exact number of recruits fairly, as, though the populations are nearly the same, the birth rate and the local rate of infant mortality may vary, and must affect the case. I have not found sufficient statistics to check these points.

The exact population of the areas, and the counties composing them, are given in Table E. It will be noticed that the areas Numbers 1 and 8 have a population of about a million less than the other areas. It was considered that the different laws and conditions of society in the kingdoms of Scotland and Ireland were sufficient reason for keeping them as units, a system at present adopted.

Before any further steps at organisation are considered, we must fix the garrisons of the coast fortresses necessary in these areas; and also make it clear to ourselves what troops are both nominally and actually recruited from these areas at present.

It is clear to any one who has studied the question at all closely, that Cardwell was right when he made the army to a certain extent territorial, and the pity is that his successors did not carry on his work. As this has not been done, it will be found that some alterations in the distribution of the local forces are necessary.

Table E.

Area.	Counties.	Population.	Area.	Counties.	Population.
I.	Scotland ...	4,472,000	V.	London ...	4,536,000
II.	Durham ...	1,195,000		Surrey ...	718,000
	Northumberland ...	603,000			5,254,000
	Yorkshire ...	3,596,000	VI.	Cornwall...	318,000
		5,394,000		Devon ...	664,000
III.	Chester ...	793,000		Dorset ...	200,000
	Cumberland ...	267,000		Gloucester...	648,000
	Lancaster ...	4,437,000		Hampshire ...	768,000
	Westmoreland ...	64,000		Kent ...	935,000
		5,561,000		Somerset...	466,000
IV.	Bedford ...	175,000		Sussex ...	606,000
	Bucks. ...	173,000		Wiltshire ...	264,000
	Cambridge ...	200,000		Berkshire ...	283,000
	Essex ...	1,063,000		Oxford ...	186,000
	Hertford ...	240,000			5,338,000
	Huntingdon ...	46,000	VII.	Derby ...	491,000
	Leicester...	441,000		Hereford ...	112,000
	Lincoln ...	493,000		Monmouth ...	316,000
	Middlesex ...	810,000		Shropshire ...	259,000
	Norfolk ...	468,000		Stafford ...	1,252,000
	Northampton ...	349,000		Warwick ...	906,000
	Nottingham ...	597,000		Worcester ...	500,000
	Rutland ...	21,000		Wales ...	1,793,000
	Suffolk ...	362,000			5,629,000
		5,438,000	VIII.	Ireland ...	5,458,000

Table F. gives proposed garrisons for the fortresses and harbours in each area. It is not meant to presume that the strength of the garrisons is nearly correct, or that they are sufficient for the individual fortresses; but they are, as a total, a fairly safe estimate. Care has been taken not to consult the secret books which give the strength of the garrisons at present authorised, so that no secret is divulged, and no criticism is directed at the existing garrisons. The supply and medical services for the garrisons should be arranged locally; no drain from the Regular Forces of these units is allowed for:—

Table F.

Garrisons of the Fortresses in Areas.

	Areas.	Regulars.		Militia.		Volunteers.			No. Regulars.	No. Militia.	No. Volunteers.	Total.
		Cos. R.G.A.	Cos. R.E.	Bns. Inf.	Regts. Art.	Bns.	Rgts.	Rgts.				
Scotland ...	I.	2	—	2	1	2	1	1	300	3,000	2,000	7,300
Humber ...	II.	2	—	2	1	2	1	1	300	3,000	4,000	7,300
Mersey ...	III.	2	—	2	1	2	1	1	300	3,000	4,000	7,300
Harwich ...	IV.	4	2	2	1	4	2	1	900	3,000	7,000	10,900
Thames ...	V.	8	4	4	2	8	4	1	1,900	6,000	13,000	20,900
Dover ...	VI.	6	2	2	1	4	2	1	1,300	3,000	6,500	10,800
Portsmouth ...	„	8	4	4	2	8	4	1½	1,900	6,000	13,500	21,400
Plymouth ...	„	8	4	3	2	6	4	1	1,900	5,000	11,000	17,900
Severn ...	VII.	4	2	2	1	2	1	1	900	3,000	4,000	7,900
Ireland ...	VIII.	2	2	6	3	—	—	—	500	9,000	—	9,500
Total		42	20	29	15	38	20	9	9,600	44,000	67,000	128,600

Table G. gives the number of Regular Regimental Districts in each area, and the number of Regular battalions which are at present theoretically recruited in them. The number of Militia, Yeomanry, and Volunteer units in each are given, and it also shows what would be a fair proportion of cavalry and artillery for each area, that is to say, the number of units of these arms which should be recruited in each specific area:—

Table G.

Areas.	Cav. Regts.	Yeomanry.	Bats. R.H.A.	Bats R.F.A.	Cos. R.G.A.	Mil. Art'y.	Vol. Art'y.	R.E. M. & V.	Regimental Districts.	Guard Bns.	Infantry Bns.	Militia Bns.	Vol. Bns.	Total Bns.	Average No. of Bns.
I.	4	9	2	2	11	5	14	6	10	1	20	13	47	80	66
II.	4	4	4	18	11	3	13	6	9	1	18	11	21	50	66
III.	4	4	4	18	11	1	10	6	8	1	20	15	32	67	66
IV.	4	11	4	18	12	2	4	3	7	1	16	15	25	56	66
V.	3	5	4	18	12	—	3	5	4	3	22	9	36	67	66
VI.	4	14	4	18	12	5	13	12	12	1	30	17	32	79	66
VII.	4	9	2	21	12	4	8	4	9	1	20	16	26	62	66
VIII.	4	2	4	18	11	12	—	—	8	1	16	28	—	44	50
	4	7	4	18	12	4	9	6	8	1	20	16	31	—	—
	—	—	—	—	—	—	—	—	—	—	30 ¹	—	—	—	—

¹ Ireland

If we deduct the totals of Table F. from those of Table B., we find that the available army for offence and defence is as follows:—

Table H.

Regular Army at Home...	...	...	133,000
Regular Army, India and Colonies	...	...	150,000
Militia	...	...	76,000
Yeomanry	...	...	25,000
Volunteers	...	...	208,000
			592,000

The garrisons should be made up proportionately from each area, thus areas Nos. 5 and 6 will each receive a proportion from the other six areas. The fourth area could complete the fifth area, while in the sixth area it should be arranged that the necessary supplementary garrisons came from the other four areas to the nearest fortresses. Of the total of Table H, only 442,000 are at home; these should form the Home Army under normal peace conditions. But in a recent authoritative statement of the President of the Defence Committee in Parliament, it was clearly stated that eight complete divisions, presumably of Regulars, would under certain circumstances be required for the defence of India. This force is eight times 11,250, or 90,000 men in all, and comprises 48 batteries of field artillery and 64 battalions of infantry, 8 field companies of Royal Engineers, and 24 companies of Army Service Corps, and we may say at least three cavalry regiments. It is difficult to imagine that no increase from home of cavalry, horse, or heavy artillery would be necessary for a force of nearly three army corps; but the statement did not go further than to mention the eight divisions above noted, and I will not exaggerate these figures.

The following table shows what will remain of the Regular Army for purposes of home defence, after the deductions which are necessary and probable have been made:—

TABLE J.

	Cav. Regts.	Batts. R.H.A.	Batts. R.F.A.	Cos. R.G.A.	Cos. R.E.	Cos. A.S.C.	Battns. Infantry.
Total Regulars ...	31	23	150	108	70	80	166
Abroad	13	13	57	64	?	?	85
Fortress Duty ...	—	—	—	42	20	?	—
Eight Divisions ...	3	—	48	—	8	24	64
Total employed ...	16	13	105	106	28 ?	24 ?	149
Leaves for service in England	15	15	45	2	42 ?	56 ?	17

Three of the cavalry regiments are Household Cavalry, and of the seventeen battalions, ten are Guard Battalions.

This force which remains, with the exception of the twelve regiments of cavalry and the sixty batteries of artillery, is really a quantity which may be neglected. The cavalry forms four brigades with eight of the batteries of R.H.A.; this leaves 52 batteries of Horse and Field Artillery and some companies of Royal Engineers and Army Service Corps as all that is available to assist in the defence of the British Islands, or to form an additional striking force beyond the seas.

This reduction of our forces to about 320,000 Militia and Volunteers, exclusive of garrisons for the fortresses and commercial ports and estuaries, brings me to the point which I wished to reach, that there is really no Regular Army for home defence or to make further additions to the troops which will probably be at once employed at the beginning of a war, except the Auxiliary Forces. To be useful these Auxiliaries must be organised for war; this can only be done on a territorial basis. This, according to my suggestions, will mean that each area will have to produce about 40,000 men properly distributed as regards arms of the Service to form fighting bodies. The Auxiliary Forces must not remain as they are now, a mass of regiments of Yeomanry and battalions of infantry without cohesion.

Each area must furnish a like amount, which will be, whether we call it army corps or not, something as follows in constitution:—

An administrative staff for the area.

Two brigades of Yeomanry with staff and Horse Artillery.

One regiment of Heavy Mobile Artillery.

One division Militia with staff, artillery, and extra services.

Two divisions Volunteers with staff, artillery, etc.

One regiment Volunteer Engineers, which should contain the following companies: 1 balloon, 1 railway, 1 pontoon, 1 telegraph, and 3 field.

The whole of my deductions as regards organisation are embodied in Table K, which perhaps requires some explanation.

1. Is the total of the forces available at present?
2. Is the average in each area?
- 3, 4, and 5. Are the deductions which must be made from (1) before we arrive at the actual available force for the Home Army the exact allotment of companies R.E. and A.S.C.? There is a state of transition in the R.E., and units abroad have not got their supply and transport arranged on a war basis.
7. Gives us what is available for home service.
- 9 and 9a. Give what I have worked out as suitable forces for the areas. The Scotch area would require to have its units on a 20 per cent. lower establishment, on account of the smaller population.
10. Gives the units required for the defence of the Kingdom, to which must be added the four cavalry brigades which could be used at home or sent elsewhere as circumstances might dictate.
12. Is the total of the necessary local Home Army. The following lines show that there is a surplus in some directions and a deficit in others.

Table K.

		Cavalry Regts.	Yeomanry Regts.	Batteries R.H.A.	Batteries R.F.A.	Companies R.G.A.	Infantry Bns.	Companies R.E.	Companies A.S.C.	Militia Art. Regts.	Militia Inf't Bns.	Vol. Art. Regts.	Vol. Inf'ty Bns.	Militia and Vol. Engineer Units.
1	Total existing ...	31	56	28	150	108	166	70	80	32	124	65	219	42
2	Average to each area ...	4	7	3½	18½	13½	20½	8½	10	4	17½	9½	31½	6½
3	Abroad ...	13	—	13	57	64	85	?	?	—	—	—	—	—
4	Fortresses ...	—	—	—	—	42	—	20	—	15	29	20	38	9
5	8 Divisions ...	3	—	—	48	—	64	8	24	—	—	—	—	—
6	Total of 3, 4, & 5 ...	16	—	13	105	106	149	28	24	15	29	20	38	9
7	Take 1-6 ...	15	56	15	45	2	17	?	?	17	95	45	181	33
8	Average of 7 in each area ...	2	7	2	5½	—	2	?	?	2	12	6½	26	5
9	Required ...	—	—	7	9	18	—	?	9	1	8	—	16	1
9a	Ireland ...	—	7	9	18	—	—	?	9	1	24	—	—	1²
10	Total required by this scheme ...	—	56	16	128	—	—	72	8	90	—	112	8³	—
11	4 Cavalry Brigades ...	12	—	8	—	—	—	?	4	—	—	—	—	—
12	Total of 10 & 11 ...	12	56	24	128	—	—	76	8	90	—	112	8	—
13	Surplus ...	3	—	—	—	2	17	?	—	9	5	45	59	?
14	Wanting to complete...	—	—	9	83	—	—	?	?	—	—	—	—	?

¹ None in Ireland.

² In each area.

³ Militia.

In the surplus shown in Table K the three cavalry regiments are Household Cavalry and ten of the battalions are Guards. These should not be interfered with; they have their special uses. There is a surplus in Militia and Volunteer units and a shortage of batteries of artillery, and also probably of engineers and Army Service Corps companies. As these additional batteries are for the Territorial Army, I would advocate that they all should be raised by the conversion of the surplus Militia and Volunteer units.

In this way, without seriously interfering with the actual constitution of the existing forces, they could be made into effective fighting machines with everything ready for war. The reduced Volunteer battalions would also supply the necessary for the increased numbers in the battalions which remain.

It is to be hoped that some such reorganisation scheme will not be considered out of place. Without such a reorganisation I fail to see how any scheme for the expansion of the forces proportionately in time of war can be made effective, or have any chance of success.

I have refrained from entering into all the details of the organisation which I have worked out, as these would only be in place in an essay on organisation as a primary subject, and not one in which it is touched upon to make other proposals comprehensible.

CHAPTER VI.

Method of Obtaining the Recruits.

To arrive at a method of securing the necessary recruits for all branches of both Services is a matter of considerable difficulty. While the arrangements have been hedged round by the fence of absolute voluntary service, they have never been fully attained, and have been extremely costly.

So far we have arrived at the following points: What forces exist, what forces should continue to exist, and the total number of men available and that are required for service. We have also stated briefly the terms of service which should be introduced, that the men trained may be most useful to the State and also form a sufficient reserve.

It is all very well to determine the length of service, the age of enlistment, etc., and then to say that the service is to be voluntary; but only the event can prove to what extent the necessary volunteers will be forthcoming.

There are some hopes of the expectations being in a measure fulfilled, from the fact that the natures of service suggested vary so much that the existence of the one may drive, as it were, recruits voluntarily into another. The arrangements by which recruits are taken for the various Services at various ages should make it possible for all to serve, without interfering with their education. It would, however, be to court disaster to trust to voluntary enlistment and the national military ardour which may exist, but is unlikely to take the concrete form of any sacrifice, and therefore the whole system must be backed up by good Defence Laws and a complete register of the population. Without these there would be a chance of failure, and there must be no avoidable chance of failure in a good scheme.

The first defence law which is necessary is one revising the law which authorises the ballot for the Militia. It must enunciate the

fact that every man owes to the State 19 years' service, should it be demanded of him, and that he is liable to pay it in any form necessary for the proper maintenance of the State. There should be absolutely no exceptions to this law except the Sovereign and those physically and mentally unfit, which latter class should include debased criminals. All other exceptions have proved themselves in other countries to be open to objection. Once a law of this nature has been passed, much of what we call irksome would be removed from service. A man would feel that he was only doing his own work and natural duty. The work required being a duty, the remuneration paid by the State for it should be small.

The second defence law should state that no male can enjoy civil rights or hold any State appointment, however great or small, before he has attained the age of 40, unless he has served or is serving his prescribed time in one of the forces of the country and is an efficient member of that force.

It is clear that no country should be ruled by those who are not willing to share in the burdens of its defence unless they have attained a mature age.

The third defence law should be that every male must be registered in the area in which he is born, and that he or his natural guardians must notify if he remove out of the area, and that he should be subject to a heavy penalty if not forthcoming should he be required for service. There should be penal clauses against anyone maiming or self-maiming any male to make him unfit for service.

The fourth defence law should provide that full service in any recognised Colonial Militia or Volunteer Corps will count towards qualifying for citizen rights; but that such service does not count as a portion of the quota furnished by the area in which such Colonial Volunteers were born.

Now, what exactly is required for each area? It is about 19,000 men from the English areas and 17,000 men from the Scotch and Irish areas. The differences in the Irish areas are a matter of regret, and I am sure it would be in many ways better if the law could include Ireland on an equal footing—it would be to the ultimate good of the nation. The non-existence of Volunteers in Ireland is an evil; if they could be safely instituted, much which is now very unpleasant might, it is hoped, disappear.

The healthy fusion of classes resulting from Volunteer service should tend towards general contentment. I am, however, bound to bow to the decisions of the authorities and to treat the forces as they exist.

The small annual contingent of recruits, which is provided for above, will really be found not to be much larger than what has now to be provided, if we consider all classes of recruits; but the number required for the Army will be much larger and that for the Volunteers and Yeomanry much less. With the system suggested we should get the men which we actually required with certainty, at the most useful age, exactly when we wanted them, and altogether. All the recruits would be liable for 19 years' service, and this does not appear to be a small tax upon a man, though as a point of fact it really does not amount to much.

The country, if it exercises due economy, should not and need not attempt to pay highly for its home-defence soldiers. They should

be fairly paid, but not over-paid. It is certainly not necessary for any man to have nearly ten shillings a week as pocket money given him by the State, when all his necessities are provided. This lavish treatment only teaches habits of intemperance and waste, which take long to unlearn; three or four shillings a week would be ample. The country should not pay anything to any man in any of the many forms of reserve which are here suggested unless called up for training, except to those men of between 9 and 12 years' service in the Foreign Service Army, who should be looked upon as a reserve for small Colonial wars.

The reserve pay of these men, if paid weekly, might help them to get into regular civil work; but the State should be bound to aid them to employment in other ways.

The fundamental principle underlying my suggestions is, that every branch of the Service should be enlisted voluntarily from a given annual contingent; but in the event of there not being sufficient volunteers, ballot should select from the annual contingent the necessary recruits to fill the branch of Service in question. That is to say, that the provisions of the laws above suggested must be sufficiently strong to ensure the success of the scheme if adopted; all half measures are always doomed to failure.

The advantages held out to individuals for embracing the profession of arms, or rendering voluntary military service, should be considerable. There is certain to be little or no trouble in getting the necessary voluntary recruits for the Navy and for the portion of the Regular Army serving abroad if these advantages are sufficient.

The following is a detail of the suggested methods for obtaining recruits from any one area. All the arrangements should be made in the area for the recruitment, and they must be based upon the annual register of males in the area. The first call is 3,000 men, who will have to be produced annually, for the Navy. These should be volunteers; they must be taken at whatever is the most suitable age, which can only be determined by the naval expert. For a landsman to advise on such a point would be impertinence. The arrangement should be such that, say, at the age of 14, 16, or 18, or whatever may be the ideal age for beginning the nautical education of the seaman youth, all those who attain this age in the area may volunteer for sea service—say on the 1st March. These must all be medically examined by the 15th March. If there be then a deficiency in any area it must be made good; firstly, by the equal division of any surplus which there may be in any other areas, and secondly, if there is a total deficit, the areas which have failed to produce the necessary quota should apply the ballot amongst the youths in each area who have attained the necessary age in that year. Should the draft to complete be very small, the ballot might be restricted to certain coast sub-areas, these sub-areas being required to furnish fewer recruits proportionately out of the same annual contingent for the Army at a later date.

The inducements for joining the Navy should be similar to those given for volunteering for the Foreign Service Army, which I propose to explain fully later.

Men drawn for the Navy by lot should be allowed to exchange for service in the Regular Foreign Service Army, provided that a free substitute be forthcoming out of the same annual contingent; all payments for exchange to be illegal.

The second claim from the area would be the recruits for the Foreign Service Army. For this force all that would be required from the area would be about 26,000. This demand would be considerably less than that which is now made upon the country for the Army, but it would all fall upon the one category, namely, that containing all youths who reached the 20th year before the next 31st December, and it would be required all at one time, say the 1st March, volunteers having given in their names by the 1st February and the ballot being put in force if necessary on the 14th February to make good the deficiency. Every effort must be made to make this force, like the Navy, an entirely voluntary service. To attain this the status of men in these Services must be good, and the ultimate prospects of the men who serve in them should be very good. I feel certain that there will be really no difficulty in obtaining volunteers for these Services, if service in them is practically the only means of entering any form of civil, police, the post office, and several other favoured forms of employment. Employment of this kind should be given none while there is a man who has completed his service available, and the employment of females in the post office and boys in the telegraph service should be reserved for the children of these men. If investigation showed that these services would not produce sufficient employment for the men of the long-service forces, other steps would have to be taken. There can be no doubt that it would be easy to frame regulations to make these Services attractive; but even with them it might at first be difficult to get the necessary number of voluntary recruits, because the people are unwilling to believe in the continuity of any policy or promises held out by any Government while it is only supported by one party.

The question of the rate of pay is not so important as it might appear. It might not be politic to make any large reduction, as for some years the existing Services and the new ones would have to overlap. The new recruits, some of whom would be of a superior social status, would find it difficult to serve in an inferior position on inferior pay to the old class of soldier. It could not be considered desirable to promise to the existing soldiers the same appointments which it is proposed should be the right of the new class, for the very simple reason that in very many cases they could not keep these appointments if they were offered to them. Still, soldiers of the old class should be provided with employment, and those who were capable, if of good character and trustworthy, should be given good employment.

It must be acknowledged as the duty of the State to start in good employment all its soldiers and sailors on their return to civil life from military service. They must be given a start whatever their character may be, the best characters and most trustworthy men getting the best posts. Bad characters should not be kept in the Service, and all men thus discharged should lose all civil rights until the age of 40.

Added to the civil employments, which should be reserved for ex-sailors and soldiers, there will be a certain number of quasi military appointments, such as those of senior non-commissioned officers in the various branches of the Services which only have short and intermittent service, in which old soldiers might serve for some time and earn a pension in their old age.

The Home Army, the Militia, and Yeomanry and Volunteers must train the greater number of their own non-commissioned officers, as to depend upon the reserve of the Regular Foreign Army for these non-commissioned officers would be both bad for the reserve and for the other branches of the Service, which must be self-supporting, as far as is possible.

I may be very sanguine, but there is to my mind absolutely no doubt that in a very few years not only would all the necessary voluntary recruits of splendid physique be forthcoming, but that there would be great competition for appointment to the ranks of the Navy and the Foreign Service Army.

There are, however, those who always object to anything new, and no leap in the dark must be taken. If the new system is undertaken its success must be absolutely assured by law, and therefore there must be the ballot behind voluntary enlistment for both the Navy and the Foreign Service Army. Volunteers for these Services should have as far as possible, as regards numbers necessary and personal physique, the choice of the arm and the unit they wish to join, whilst the man selected by ballot will have to go where he can be most usefully employed.

The contingent for the Foreign Service Army should join for training on, say, the 1st March. In each area there should be a training school, which should be formed into a squadron of cavalry, a battery of field artillery, two battalions of infantry, a company of engineers, a company Army Service Corps, and a company Army Medical Staff. The training at these schools should be progressive, and last till 1st October, when all men should have a month's leave on full pay prior to going to join their respective units abroad. The cost of these dépôt schools should fall half upon the home Exchequer and half on that of India.

I have expended a good deal of space on the provisions for the Navy and Foreign Service Army, as I feel that the success or failure of the whole scheme here evolved depends upon the results of these suggestions.

I hope to see the flower of the manhood of the nation attracted into these forces, and thereby the martial spirit of the country fostered and strengthened. Once this happens, no provisions which may be necessary to make the other branches fully efficient can be serious difficulties. It is in these two Services that the State demands the most from a man, and therefore the State is morally bound to repay in kind what it has taken from the man. As a matter of fact, the State will eventually be the gainer, as it will have in the important positions which are in its gift men who have received a thoroughly good moral training, and who should be really most thoroughly qualified for these appointments. The men not being taken until 20 years of age, there is no reason that they should not be thoroughly well educated.

A man should not be prevented from volunteering for the Foreign Service Army because he has been already trained as a Volunteer; but all men who so move on from the Volunteers into the Foreign Service Army must be replaced in the Volunteers by recruits from the same annual contingent. No man can, under any circumstances, count as a unit in two branches of the Service. Regular soldiers, when they join the Auxiliary Forces as non-commissioned officers, will cease to be kept on the strength of the Regular Reserve.

The third class, which has to be drawn from the annual contingent, is the draft for the Yeomanry and Volunteers. For this each area has to supply a little over 4,000 men, Ireland only finding men for seven units of Imperial Yeomanry, unless it is considered possible to relax the present laws regarding Irish Volunteers.

Men for these Services should be allowed to volunteer during the 17, 18, 19, and 20 years. Any man who is efficient after six months' Volunteer service should be exempt from the application of the ballot for service in any other branch, and will remain so, provided he continue to be efficient. Men in the Volunteers should receive no pay except when in camp for training. They should receive their uniform from the corps as at present, the money being found by the Capitation Grant. The existence of Volunteers makes it quite unnecessary to allow any of the exemptions which exist on the Continent, since a man can be an efficient Volunteer and still be quite capable of earning his living.

The considerable length of service which is suggested for Volunteers in this scheme may be objected to; but I think that men who can take their training very much when it suits them should not be let off with a very few years of such training. A man while an efficient Volunteer should have full citizen rights, which he will forfeit if he is not efficient. Any man who leaves the Volunteers before he has completed his period of service should be drafted into some other branch of the Service, or punished as may be decided.

All Volunteer recruits should begin their training in February, and should be passed in September as efficient. No man should be allowed to join the Volunteers who has not been found sound by medical inspection. All recruits should have attained some given standard of education similar to that required in Germany for a one-year Volunteer, but probably not quite so high.

I do not apprehend the slightest difficulty in obtaining the necessary recruits for the Volunteers; but should the attractions of the other branches of the Service be so great that Volunteers were not forthcoming, a ballot to complete the necessary numbers would have to be taken. This ballot would be applied to the annual contingent after the general ballot for the Short Service Army and Militia had been taken from the contingent of that year.

The Volunteers and Yeomanry should be liable for service abroad, though not primarily intended for such service. They should not be sent abroad until the full reserve of the Short Service Army and Militia has been called out; and if sent abroad, arrangements must be made to form new units in place of those sent away.

The standard of efficiency demanded from the men should be high and the force should be organised with staff and all the units necessary to enable it to take the field.

The fourth and last demand on the annual contingent of each area should take place in April of each year. In this month, if a sufficient number have not already volunteered for service in the Regular (Home) Army and the Militia, the ballot must be resorted to. The total number which has to be raised from each area by voluntary enlistment and the ballot is 8,000 men.

There will be variations in the numbers drawn from Scotland and Ireland due to their smaller populations and the social conditions.

The service required from a man in the Regular (Home) Army would come to about $2\frac{1}{2}$ years for the infantry and 3 years for cavalry

and artillery. There would be no reason why infantry battalions should be kept up to full strength in the winter, unless the political horizon happened to be clouded.

Thus a man would nominally get about thirty months' training in the infantry and rather more in the mounted branches and technical services.

In the Militia, after a recruit training of about three months, men would only have to perform a training of from 4 to 8 weeks each year. Men who volunteer for service in either of these forces should have choice as to which they will serve in, as far as circumstances will permit. Volunteers for these branches must apply and be passed as medically fit for service before the 15th March each year, so that the authorities should have time to find out what numbers are required from the ballot by the 1st April.

It may be urged against the above proposals that there would be a large portion of the population who were arbitrarily excluded from civil rights because there were not sufficient formations to take them all. For those who are physically and mentally incapable of service, I can see no reason why they should have rights before the age of 40; they are only a drag on the country, and should have no say in its administration. For those who are fit and who are really excluded by want of sufficient military formations, each area in which the ballot had not had to be enforced for any of the drafts on the annual contingents, might be allowed to form a 3rd reserve for the Volunteer units from all men willing to serve and who could not serve from want of sufficient Regular formations. In these areas and from those annual contingents to which this exemption applied, all 3rd reserve Volunteers, upon being passed as efficient Volunteers, should be allowed all civil rights. This 3rd reserve could, in case of war, form the nucleus of extra formations should they be considered desirable.

CHAPTER VII.

METHOD OF EXPANSION.

No country can usefully keep an Army on a war footing; but we of the British Empire have to keep a portion of our forces in constant readiness to fight against minor adversaries, and hence the existing organisation and the alterations which have been suggested, which, it is held, would make it more efficient. Part of our forces are so distant from reinforcements that unless prepared to hold their own against any probable local adversary, they had much better not exist at all.

It will be noticed by reference to Chapter IV. that the reserves for the forces are based on various hypotheses, that for the Regular Army being only such as would furnish about one-fifth of the strength of that Army from the 1st category, while the reserve of the Home Army should furnish nearly $2\frac{1}{2}$ times the strength of that Army. It is from this reserve that the Foreign Service Army and the Home Army should receive reinforcements. There should be a territorial link between each unit of the Foreign Service Army and a territorial area, so that there would be no difficulty in meeting the supply. The reserve for the Militia should fill the Militia, and that for the Yeomanry and Volunteers the Auxiliary Services.

So far no proposal has been made to increase the number of units in the event of war; but that can scarcely be considered as quite right. It is most important that the drain should be replaced in the units of an Army, and with the large forces proposed the ordinary drain of a war might be met. But war is the struggle of nations, and provision should be made in all organisations for the employment of all the sinews of the nation and to keep the sinews in good condition.

For this reason it is considered advisable that during war provision should be made for the recruitment of extra units of all arms from the portions of the population which have escaped all service by the suggestions already put forward. These units should take the place of Yeomanry and Volunteer units should these be sent out of the country.

It is not considered to be possible to keep a force of more than 400,000 men continually up to establishment at a distance from the United Kingdom, and therefore if the Regular Foreign Service and Home Armies and the Militia not used for garrison duties were abroad, it is improbable that the fighting efficiency of this Army would be increased by adding to them extra units. The expansion necessary is the keeping the units up to a full fighting strength. This would leave at home the garrison and an Army of Yeomanry and Volunteers not much short of 240,000 men available for the defence of these islands. This Army should be mobilised at once on the outbreak of a serious war and the garrisons made up to strength, and each area should then give their local Army a month's combined training. If after that, invasion seemed extremely improbable, such portions of the Volunteer Army as were not of any material assistance to the war could be sent on leave, subject to immediate recall in case of need.

It must be clearly understood that the demands on the reserve are exclusively for the particular force to which the men belong, except in the case of the Regular Army, where the Short Service Army Reserve will be available to supply the necessities of the Foreign Service Army during a war.

These men, being trained men between the ages of 24-30, are the flower of the nation's manhood, and are most likely to be able to stand the strain of war. In wars of great length it may be necessary to draw on the 2nd reserves of the various branches of the Service, and of course on the contingents which annually come to the fighting age. Countries really pressed by a war for existence will draw on their youths down to the age of 17 and on men over 40. If it ever comes to drawing on this latter class they should be formed into new independent units for duty in fortresses, relieving younger men for duties in the field. The dash required for attack will not, as a rule, be obtainable from men over the age of 40; but these men will often prove themselves to be second to none in defensive works. In all these extra formations the principle of the area being the unit of supply must be maintained. Each area must provide what is required from its categories.

The central administration of the Army only determining what is necessary for the existing circumstances and the areas providing what is required, it is only on these lines that unlimited expansion of the resources of the country is possible. As I have said, it is not so much a question of unlimited expansion of units but the continual maintenance of fighting efficiency in the units which exist,

and which have been shown in this statement to be necessary. It should be a principle that if any Volunteer organisation leaves an area during war, a corresponding reserve Volunteer organisation should be formed at once from the numbers of those who have not served at all.

By the suggestions made under this heading, it is considered that an Army of about 200,000 Regulars could be easily placed on the Indian frontiers, which, supported by the supplies of trained men available in India, should not mean less than half a million men. This is not as much as Lord Roberts considers necessary; but then his scheme is not limited by the existing Regular and Auxiliary Forces.

Supposing the situation of 1809. There would be no reason why 200,000 men of the Short Service Army and Militia should not be landed in Holland or Spain, and that this Army could be kept at that strength for two years, while the defences of the United Kingdom would be secure.

Suppose the situation of 1854; our force to assist France against Russia would be 150,000 men organised for war.

The Home Service Army, having only men between the ages of 21 and 24, would always be available for service anywhere at a week's notice in case of a small war, and should the war be prolonged, the reserve would be ample to keep this force always up to strength.

The 1st reserve of the Regular Foreign Service Army should be used to fill up losses in the ranks of this Army when the war engaged in only required the services of this Foreign Service Army. This reserve, as stated above, would be the only reserve which received pay when not called up for training.

CHAPTER VIII.

OFFICERS.

The provision of officers for the Navy and Army is a very serious question. It is perhaps even a more serious question than the provision of men; certainly there are some difficulties which almost every country in the world has found to be nearly insurmountable. Good legislation will and can produce men. Whether it is good or bad to enforce service by legislation is an open question, which may be argued both ways, though I am convinced that it is necessary if voluntary systems fail; but it is not possible to make a really good officer by law. Cap braid is absolutely useless in producing the necessary power of command in the head covered by the cap.

We do not appear to have any difficulty in obtaining a sufficient number of officers of the right stamp for the Navy under the present system of taking them young. Whether the system in vogue for the last thirty years or the one introduced in 1903 is the better does not affect the case; they are generally the same except in details. So I would advocate no change in this system except such as ordinary progress may dictate. There should also be some system of increasing the reserve of naval officers. The reserve of men without an adequate reserve of officers is not very much use. How far the present system of drafting from the Royal Naval Reserve, *i.e.*, the Merchant Service, would be satisfactory in war is a question. It would probably do very well if these men were given purely navigating duties, whilst

commands were filled up by promotions amongst the regular executive officers. The engineers, who should be very numerous in peace time, as the strain on them in war will be enormous, can almost certainly be satisfactorily filled up from the same profession in the Mercantile Marine. However, the best system of producing naval officers in reserve is for the naval expert to decide.

The number of men to furnish the officers has, as in the case of the Army, been included in the totals, so that the totals are not affected by any arrangements made for the officers.

In the Army things are different; our present regulations do not provide sufficient officers for the existing formations, and the reserve is insignificant. The long list of names in the Army List is most deceptive. No Army is worth calling an Army unless it has enough officers capable of leading it. These officers will receive casualties, and more casualties than the men. They must be replaced at once, if the forces are to maintain their efficiency.

The forces, according to the scheme above propounded, which require officers are large, say some 700,000 men serving and some 700,000 more in the reserve. If we take the proportion of officers required at 4 per cent., we find that we shall want 56,000 officers in all—28,000 in the existing units and 28,000 in the reserve. These numbers do not include officers for the Regular Native Army in India, or any local Colonial forces.

There is perhaps no country in the world which has such a large class of men from whom officers can be drawn as the United Kingdom possesses. We also pride ourselves that no nation has produced better officers. In the past the Kingdom has sent generals to every country in the world. There is some power of leading and much love of fighting still in the blood; this must be fostered and encouraged.

Let us consider each of the branches of the Service separately, and suggest some means of getting the required officers. To begin with the Regular Army. While I divided the men into different categories for the Home and the Foreign Service Armies, I should not advocate this being done with the officers. The officers of the Army must to a very great extent be professional soldiers, just as those for the Navy are professional sailors, and it is not good for them to receive all their experience in one country, as they may have to fight in any country; besides, health suffers from continual foreign service. For this reason and to equalise promotion, units of the Foreign Service and Home Armies should be linked, as far as officers are concerned, and also for the employment of the senior non-commissioned officers as instructors at home. The service of officers at home and abroad should be regulated by roster, with great freedom of exchange between linked units.

It must be acknowledged that in a short service Army with a large number of recruits to train annually, more work will be required from the officers than is even now required; and as this will be undoubtedly a deterring influence on rich officers continuing to serve, it will cause a considerable accession to the reserve of officers. Probably about the same number of officers will wish to join the Army; perhaps even more, as the richer classes will doubtless try to become officers to avoid other forms of service.

The question of how to educate the Regular officers is beyond the scope of this essay; but I would suggest that every candidate for

a commission should be an efficient Volunteer before he is allowed to compete in any examination.

Officers joining must be bound to serve for twenty years, the authorities deciding what number may be annually passed into the reserve of officers.

It must not be forgotten that to obtain professional soldiers the rates of pay must be based upon the present cost of living, and that they should receive a fair wage according to the position in society which they are intended to occupy. A leader of men should not be in the position of a beggar.

The selection of rich men for all high Army appointments, because poor men cannot afford to keep up the state required of them, is a disgrace to any country. If this is continued, few hard-working officers will be forthcoming under any system.

As regards officers for the Militia, they should serve for a similar period to the men, and should be trained for a continuous period of at least one year. The Militia should not be a stepping-stone by which officers can enter the Regular Army; this is bad for both Services. At the present moment I do not believe that there are 25 per cent. of the subalterns in the Militia who have any intention of continuing to serve in that branch of the Service. Militia officers, to be efficient, must receive a fair rate of pay; there must be no question of their sinking their military rank. They should not be allowed to go to the Reserve of Militia until they have eight years' service. Of course, service as an officer in the Militia should qualify for full civil rights, just as service in the ranks does.

At present officers in the Militia fall, roughly, into three classes: The first, the country gentleman, who likes a modicum of soldiering, and who considers the training an amusement; the second is the youth who has had his elementary education neglected, and who hopes to get into the Army by passing through the Militia. The first class will doubtless meet the requirements of the improved conditions suggested above; the material, being undoubtedly good, should produce good officers when properly trained. The second class is not to be encouraged. If youths of this class have the making of good officers in them, they should be assisted by some provision for promotion by merit from the ranks of the Regular Army to commissions in every branch of the Service. The present system is certainly most harmful to the Militia. As only some 5,000 officers are required for the Militia, there should be no difficulty in getting the necessary men, when we remember that for very little personal inconvenience a man is doing his duty to his country and earning citizen rights.

There will have to be some permanent appointments in the Militia, such as brigadiers in areas, brigade-majors, adjutants, quarter-masters, and a small instructional staff. The officers so employed should be exclusively Militia officers, though the men of the staff can be partly from the 2nd Class Reserve of the Foreign Service Army.

For the Yeomanry and Volunteers, there has been much difficulty in getting officers. This is perhaps not acute at this moment in the Yeomanry; but this may only be a passing fashion.

For these forces, as for the Militia, it should be understood that an officer cannot sink his identity as such at any time. They should be as proud of their rank as are their brethren in the Regular Forces. They should be paid each year a fixed sum for efficiency to cover actual expenses, say subalterns £20, captains £35, majors £60, lieut.-

colonels £100. Those permanently employed as adjutants and quartermasters to be paid at Army rates. The system of being unpaid does not seem to me to have answered well; but of course this is a suggestion which is open to criticism. What is wanted is that the best men should be obtainable for appointment, and it is very doubtful if we shall get them if they have always to be sufficiently well off to pay the necessary expenses out of their own pockets.

It is most necessary that there should be selection in the choice of officers originally and in their subsequent promotion. This can only be possible if there is some tangible benefit in being an officer. The provisions here brought forward ought to tend to make it more attractive to be an officer than not; while the ordinary Defence Laws above suggested should encourage many who now do not take any steps towards soldiering to become officers.

Inefficient officers should not be retained; men thus rejected should be punished by the loss of all civil rights, they being useless to the State, unless they are willing to serve as soldiers, Militiamen, or Volunteers, as the case may be, or have attained forty years of age.

CHAPTER IX.

CONCLUSION.

The above are the outlines of a scheme which I believe would meet the requirements of the nation for war. That is, for holding her existing possessions and for striking an effective blow should the necessity arise. The forces arranged for have been essentially the existing forces, though the scheme has suggested alterations in their construction which seem to be absolutely necessary to make them sufficiently manageable, and also to give us the various arms of the Service in the proper proportions.

Each of the obvious necessities of the nation at war has been considered and specially provided for. These are: The protection of the home ports, the protection of our Indian and Colonial possessions on the basis of the present garrisons; the provision of a striking force with an adequate reserve to meet the requirements of a protracted war; and the provision of a large force for home defence should that be necessary, this latter being organised so that it can go anywhere if required; lastly, though it should really take first place, a full and, it is hoped, sufficient reserve is provided for a powerful Navy.

As has been said before, the only complete reserve is the manhood of the nation. Still, with the eight military training schools for the Foreign Service Army, whose normal duty it would be to turn out rapidly trained soldiers, there would be some hope of the machinery existing which could form extra units if need be, and to furnish further reserves for the existing units in a short space of time.

It has been previously mentioned, but it is obvious to anyone who has studied the systems by which the rest of the world gets its recruits, that there must be a complete system of registration of the population of the country. We pride ourselves upon our statistics very often, but they are in reality very much guess-work. The basis of any good military system is the register of the male population, without which all is in reality chance. Without it no fair ballot can

be applied, and if no fair ballot can be used, every system based as this is on the population of the nation must fall to the ground.

The reason why I consider this the best system for obtaining the able-bodied male population is that it would be efficient. The men would be produced; they would come at an age when useful, and would not waste two years in barracks before they were men. It is based on the naval and military requirements of the nation, and not on the convenience or enthusiasm of any particular district.

The system should not be irksome. The acknowledged duty has to be performed equally by the manhood of the nation, and no individual man can acquire his citizen rights without service until he is forty years of age. He is given a great number of ways in which he may perform his duty in a voluntary manner. If he selects one of the hardest forms of duty and does it well, the State is made responsible for his future, unless he will not perform the work offered to him. If a man cannot suit himself in the performance of his duty, his mind is made up for him by the ballot.

The system should be no more costly than the present one, and be relatively cheaper than any other which employs the existing forces. No more men are employed than at present, and the paid reserve is less. The actual pay of the Navy and the Foreign Service Army would be about what it is now, or a little more, while the pay of the home service man might well be reduced. It does not do a man any good to have more pocket money to spend between the ages of 21 and 24 than he is ever likely to have again.

The Militia should cost about the same as at present; the trainings might well be longer, but the bounties should be saved—these are merely bribes to secure men under the present system, and would be unnecessary.

The Yeomanry and Volunteers should cost little if any more than at present, though money spent in directions which lead to efficiency is not really an expense to the nation.

There is no reason why a reserve man should receive any pay, as when he returns to civil life a similar drain is made upon civil employment by the demands of the next contingent; so if he is willing to work he should be able to get it.

The system should be really most economical to the nation, as by it a very large proportion of the population will receive an education in self-defence and self-restraint, their bodies also receiving physical development. A nation so trained should be capable of greater productive powers than a nation which only really employs its unemployed for defensive purposes.

The Militia, Yeomanry, and Volunteers would have efficient units, organised so as to be immediately available for defence or offence. They would then be economical Services, even if some additional money were spent in making it more easy to get the best available material as officers for service in them. If the three-quarters of a million men which it is proposed should be available in these Services are so organised as to be in a condition to take the field, even if the cost were considerably increased, there can be no doubt that it would be true economy. When we are told, as we are now, that any portion of the national defences are not of any use in case of war, we know that, if this be true, all the money and time expended on these forces are wasted.

The question of expansion has not in any way been overlooked, but with the number of units available it has been considered that the power of expansion should primarily move in the direction of bringing up full reserves to meet the waste of war, and to bringing the existing units, in combination as fighting bodies, into line with those of the Regular Army. This will of course cause an increase in the number of officers for the staffs of these extra formations.

The primary division of the United Kingdom into eight districts will simplify organisation. Each district will have again to sub-divide its area for further administration; but it is obviously impossible to go into details of this nature in a short paper.

The figures produced above in the arguments are the results of many processes, which would be too lengthy to follow. The books to which general reference has been made are:—"Whitaker's Almanack"; "The Encyclopædia Britannica"; Army and Navy Estimates, 1905; "Organisation and Equipment," Banning; Official Army List; the German Army Regulations; German Defence Regulations; the *Times* reports of speeches by the Prime Minister, Lord Roberts, and others.

It is felt that this essay has only touched the fringe of the important subject, and indicated general lines on which advance may be made. The people of the country can alone carry out the work by continually insisting on its legislature the necessity of passing the required Defence Laws. This it will only do if it is known that the moral and military training of a nation has always been and always will be the true foundation of its greatness.

The country will find that the best way to get this military and moral training is to demand the service of its manhood in its armed forces as a right. It will then be found that this is the cheapest and least irksome method.

The man, once he is made a portion of a comprehensive and efficient national organisation, will no longer feel that service in the defence of his country is an insupportable burden.

Any half measures are doomed to failure. It may be politic to gild the pill of compulsion, and it is certainly the country's duty to see that its servants do not suffer, but gain, by good and willing service.

The welfare of the country is every man's first duty. He owes service to the country, and should see that it is well done. It is not alone by being an armed nation that the country will prosper; it is by being a nation manned by patriots in the true and best sense of the word. If this be achieved, then will Britain "HOLDFAST" her heritage of freedom.

FIFTH SPECIAL MILITARY ESSAY, 1905.

Subject:—

"THE BEST, LEAST IRKSOME, AND LEAST COSTLY METHOD OF SECURING THE MALE ABLE-BODIED YOUTH OF THIS COUNTRY FOR SERVICE IN THE REGULAR OR AUXILIARY FORCES AS EXISTING, AND FOR EXPANDING THOSE FORCES IN TIME OF WAR."

By Major R. F. SORSBIE, R.E.

"Nunquam non Paratus."

THE ideal Army, composed of the very pick of the nation's manhood, could only be raised and maintained subject to the consent of the nation to universal liability for military service.

This, whatever may happen in the future, is apparently outside the range of practical politics at the present time. No Government which attempted to introduce it would, so we are told, survive the attempt.

Failing universal liability, we have to fall back upon voluntary service, and are immediately confronted with the problem of how best to attract to the Army in sufficient numbers the stamp of man who will be likely to make a good soldier.

In considering this problem we have to bear in mind that in these days of heavy and increasing Imperial expenditure, modesty in the question of pay must be studied, while, if the inducement of high pay cannot be offered, compensating advantages in the conditions of life and service are necessary in order to compete successfully with the other professions and callings which absorb the youth of the nation. In short, we must either offer a rate of pay which compares very favourably with those to be obtained in the labour markets, or the conditions of life and service must be such that men of the right stamp will consider them as outweighing the disadvantages of an inferior rate of pay.

Now, in the first place, what is the right stamp of man for the Army?

He should be between the ages of 18 and 25, should be of sound constitution, and of such physique that he is, or will after a short period of good food and physical training become, fit to support the hardships, privations, and exposure of service in the field.

He should be intelligent, so that after training he may be trusted to fulfil satisfactorily the functions required of the individual by modern conditions of warfare; and if possible he should be of good character.

Recruits for the Regular Forces and Militia, which latter passes many men on to the Regulars, are obtained in the main from the following sources:—

- a. The families of soldiers.
- b. Men who from some cause—failure to obtain work, a discreditable action on their part, a love affair, or inability to get on with their relations—find it desirable to quit their homes for a time.
- c. Youths who, without knowing or thinking much of the practical advantages or disadvantages of the Army, are attracted by the uniform and the glamour of a soldier's life.
- d. Men who are discontented with the other means of employment open to them, and who, after making enquiries, form the opinion that the Army offers them a more congenial life and better openings for advancement.

The great majority of Class (a), having been brought up among regimental traditions, and having, as it were, "soldiering" in their blood, enlist as a matter of course, either as boys in the band or drums, or later, when of an age to do so, as ordinary recruits, and thus their case presents no problem, at any rate in the initial stage.

Classes (b) and (c), though the causes of their attraction to the Army may lie in the main outside the consideration of any advantages or disadvantages of Army life, could be much improved as sources of supply, both with regard to quality and numbers, if, in addition to the introduction of those measures which would tend to mitigate the conditions which at present cause the Army to be unpopular, and which will be discussed presently, recourse were had to a little skilful advertisement.

This might be done by causing to be inserted weekly in the cheaper popular papers, such as the *Daily Mail*, and various provincial and county papers a column of description of a soldier's daily life in the various branches of the Service at home and in the Colonies, written in an interesting narrative form with details of pay and expenses, and enlivened with accounts of sport and amusement, and the various special courses of professional instruction.

In addition to this, the authorities might offer prizes from time to time for the best photographs of troops on the march and in action, and of incidents in military life, which would make interesting and effective pictures.

From these photographs, enlarged, coloured or uncoloured prints and engravings could be prepared similar to the Christmas and summer supplements of the illustrated papers, and issued to regimental institutes throughout the Army. Such pictures would, if good, find a ready sale at a nominal price among the men, who would send them to their friends and relations, thus ensuring that they obtained a wide circulation, and indirectly advertising the Army and causing a more sympathetic interest to be taken in it.

Superior coloured posters, too, could be prepared from the same originals and affixed to public buildings and offices throughout the country, in lieu of the stiff and unattractive recruiting placards which are to be seen there at present.

Class (*d*), which has never been large, is unfortunately apparently decreasing still further, owing to causes which will be discussed in the following pages.

Advertisement such as that recommended above would no doubt tend to improve this class as a source of supply, but would be of very little use by itself.

Let us now consider what are the factors which make for unpopularity of the Army, and so act adversely on recruiting, and how these conditions could be improved.

First, there is the idea which, unfortunately, still obtains among a considerable portion of the civilian population, that the Army is composed of a "brutal and licentious soldiery"; that "soldier" is merely another word for "blackguard"; and that a son or brother who "goes for a soldier," or a daughter or sister who publicly consorts with one, must be considered as having gone irreclaimably to the bad.

That this idea is still fairly prevalent is proved by the instances which come to notice from time to time of non-commissioned officers and soldiers being refused service or admittance at hotels and places of public entertainment, of parents willingly scraping together their small savings in order to buy out of the Army a son who has enlisted, and of the difficulty which a discharged soldier meets with in obtaining employment in civil life, even when possessed of more than average qualifications.

Also, one has only to mix with and talk to the classes from which our recruits should come to realise very quickly that, however much they may admire the Army and its records in the abstract, they have, in a very large number of cases, a great aversion to their relations or themselves having anything to do with it personally.

No doubt this prejudice will die out eventually. Newspapers and a more universal education, as well as the great improvement in the standard of living and behaviour of soldiers themselves, have lessened it considerably already; but without being attacked by other means it will die hard and slowly.

If in all schools, physical and the elements of military training, including instruction in the handling, aiming, and firing of the rifle were made compulsory by law for every able-bodied boy; if for all Government employment, suitable for soldiers, a period of service in the Regular or Auxiliary (naval or military) Forces were made a *sine qua non* of eligibility; and lastly, if all officers of the Regular Forces were compelled by regulation and officers of the Auxiliary Forces encouraged to wear uniform whenever they appeared in public, except when engaged in games or sports, the discredit at present attaching to military service would in a very short time be converted to honour.

Another and perhaps more serious deterrent to recruiting and cause of unpopularity, both for the Regular and Auxiliary Forces, is the way in which responsible ministers, Members of Parliament, and the Press of the country criticise and condemn the capabilities, organisation, equipment, training, and indeed everything to do with both officers and rank and file. The only people who are really in a position, and whose personal interest it is, to reply to these

criticisms, and so present both sides to the public, are the people criticised, and they are forbidden by regulations to do so.

The consequence is, that the general public, who have no personal knowledge one way or the other, and on whom we depend for our voluntary recruits, form the idea that all our officers, with few exceptions, are uneducated, incapable, indolent, and inefficient; that the Army is badly managed and equipped, and also absolutely inefficient; that it could not be depended upon in time of need; that no definite improvement in its organisation and condition has taken place, or is likely to take place, for some time; and consequently that at best it is a risky concern to be connected with, and more likely to bring discredit than honour or success.

In consequence, though they recognise that we must have an Army of sorts, they are extremely anxious to avoid any personal connection with it.

A further serious consequence of this unbridled and heedless depreciation is this: Anyone with a knowledge of human nature must have observed that the majority of people will, failing—and even frequently in spite of—proof to the contrary, rate a man at his own valuation.

Nations are merely collections of individuals, and the same truth applies to them. Moreover, it is in the last resort the *people* of a nation, not the Government, who make war or peace, and, given an International dispute of sufficient gravity, the decision of a nation as to whether it is desirable to fight or not is very powerfully influenced by that nation's estimated superiority, equality, or inferiority with regard to its opponent. When we consider also that as almost all our powerful neighbours favour conscription, and consequently most of their male population are or have been soldiers, it is not difficult to realise that the opinions publicly expressed from apparently well-informed and influential sources in England, and scattered broadcast over the world, as to the inefficiency and harmlessness of our national military forces, may quite possibly some day be the means of turning the scales in favour of war.

We are always being warned against under-rating our enemies. Let us also avoid an even more serious mistake, and one likely to lead to worse results—depreciating and under-rating ourselves.

Soldiers would be the last people to deny that at the time of the South African War the Army was not in an efficient state, or to contest that it is not capable of very great improvement still; and no one welcomed or welcomes more than they did and do the hope of *genuine* reform. But they resent hotly the imputations which would make the Army responsible for everything which has gone wrong, and the contention that it has not already made and is not still making very great strides towards efficiency.

Further, these contentions, exploited principally from political or private motives, are not only very unfair to the Army, but also calculated to seriously injure it and the country. For not only will the constant carping tend to affect the number and class of recruits for the rank and file, but also it causes a very general feeling of disheartenment and disgust among the existing *personnel* of the forces, and will in time, if it has not already done so, seriously affect the supply of subaltern officers.

After all, who was responsible for the arming, equipment, and organisation of the fighting forces previous to the war; for the lack

of facilities and encouragement for officers, and through them the rank and file, to study and perfect themselves in their profession; for the exaggerated centralisation of authority and responsibility; and for the "red-tape" system which paralysed all initiative and sense of responsibility in individuals in peace time, and led to such deplorable inefficiency and fear of responsibility in war?

Certainly not the Army.

The officers come from the same classes precisely which supply the Navy and the other professions. In the competitive tests which they have to pass before entering (and which are prescribed and carried out, not by the military, but by the Civil Service authorities), their capabilities and performances compare favourably, according to the evidence of the headmasters of all the great public schools, with those of the candidates for other professions. After joining, most of those who have been really given the opportunity to think for themselves and develop their own initiative and sense of responsibility have given a very good account of themselves, as has been witnessed by innumerable instances on the Indian Frontier and on minor expeditions and operations in Africa and elsewhere, and may further be proved by anyone who cares to inquire into what the British subaltern has done and is doing under the Sirdar in the Soudan.

Further, if the capabilities of leadership of the present-day British officer are as poor as many people would have us believe, how is it that he gets such good work out of native troops, who, as has been proved over and over again, will follow him anywhere—and this not only in the case of the best types of natives but also with those who, under other leaders, are beneath contempt as soldiers?

Since the war, very great improvements have been made in the way of decentralisation; company, subaltern, and non-commissioned officers are now given opportunities for exercising their own initiative and sense of responsibility with regard to their commands, and the men also are taught individually to use their common-sense to further the successful accomplishment of any given plan—a state of things which was practically unknown before the South African War. No one who has any expert knowledge of the Army will deny that an immense improvement has resulted in consequence already.

Draw public attention to abuses and failings in the Army and its administration, by all means; but, having done so, and ensured measures being taken to remove them, give the main scheme of reform (formulated by Lord Esher's Committee, after the most prolonged and exhaustive discussion by Parliament, Committees, and the Press in the latter part of 1903 and beginning of 1904, and approved and adopted, with slight modifications, by the Government and the country at once as the surest and most practical method of attaining the desired end) time to develop; give credit where credit is due also, and spare the Army the incessant carping and depreciation, based for the most part on matters which happened in the past, and for which at the worst it is extremely doubtful whether it was responsible.

Let us remember also in connection with this scheme that when changes of so absolutely drastic and sweeping a character are made, as these had to be, at once, without complete information or the aid of a preliminary experimental term of practical experience in their working and results, there are sure to be occasions when the authorities will appear to be inconsistent owing to their finding themselves obliged to modify or alter the plans originally announced in order to

meet the requirements of a riper experience or changing strategical conditions.

A third important cause of unpopularity of the Army arises from the unfavourable reports of discharged soldiers on their return to civilian life—reports to which point is added by the men's difficulty in getting employment.

And here we have at once what is undoubtedly a very serious deterrent to any intelligent man who thinks of enlisting.

In a voluntary Service like ours, where, owing to the limitations imposed upon them financially, the authorities have difficulty in attracting sufficient suitable men for the defence of the country, it is inconceivable that the Government should not make use to the fullest extent of all available inducements at their disposal. Nevertheless, they do not do so.

The police, the postal and customs services, and *all* Government employment which is suitable for soldiers and sailors, without exception should be strictly reserved for men who have served a certain term in the naval or military (Regular or Auxiliary) Forces of the country.

Not only is it common justice that the man who sacrifices his time, abilities, and in many cases his health and prospects to the voluntary defence of his country, should have more claim on the consideration of his country afterwards than the man who stays comfortably at home; but also it is very expedient, not to say necessary, if we wish to continue to obtain suitable men in sufficient numbers to prevent national disaster.

A considerate and generous policy in dealing with officers and men who have served in the fighting forces of the country would do more than anything else to root out unpopularity and false ideas with regard to the Army among civilians, would attract a better stamp of man in larger numbers, and would cause a great improvement in the *morale*, conduct, and professional keenness of the existing *personnel*.

Also, although great efforts have been made in the way of improvements in pay, messing, quarters, and other details, to make the soldier's life healthier, more comfortable, and more interesting, there are still many matters in which a change, while causing little or no expense, would remove causes of discontent, which, however trifling they may appear to outsiders, or even, in some cases, to Army officers, are not so by any means from Tommy Atkins' point of view.

Of what use, for instance, is the valise equipment for any *practical* purpose? What little it saves in the way of transport, could be saved, and the saving increased far more cheaply and efficiently, by the adoption of lighter, better, and more suitable transport vehicles, and an improved saddle for pack animals.

By far the most practically useful wheeled transport for general service, in any country where wheeled transport can be used, is the light cart in use in the Indian Transport Service. It weighs exceedingly little, carries 800 lbs. of stores, is extremely simple in construction, easily repaired, easily and rapidly loaded and unloaded, has an interchangeable centre-shaft, which makes it equally available for mule, bullock, donkey, or horse draught, two animals being required for it. Finally, it is extremely mobile, even in rough or enclosed country.

In most of the countries and climates where our Army could be called upon to operate the valise equipment cannot be used, and when it could be used it would greatly handicap and impede a man's movements in the field, particularly nowadays, when rapidity of movement, rapid and accurate snap-shooting, cover and concealment are of such vital importance. It requires elaborately careful packing and fitting, and if worn for long it would, in a great many cases, injure a growing youngster's health by its constriction of the lungs. It takes up a good deal of a man's spare time in cleaning, packing, fitting, etc., and on service, even with the existing types of *matériel*, the little extra transport its abolition would entail would be more than compensated for by the individual soldier's increased efficiency and mobility, and his ability to carry more ammunition and water, or a light pick-axe in lieu of it.

While on this subject it is well to mention also the entire unsuitability of the present pattern of ammunition pouch, and the position it is worn in.

There is no doubt whatever that this pouch was directly responsible for the loss of hundreds of killed and wounded in the South African War, by preventing men from moving freely in a recumbent position when under fire.

To continue: Of what practical use are guard and sentry duty, as employed in the ordinary routine of garrison life? Where there is any necessity for a guard or sentry, otherwise than just for show, the duty could be performed far more economically and just as efficiently by armed or unarmed military or civil police; and there is no question as to its uselessly fatiguing the men and taking up valuable time which might otherwise be occupied in practical and useful instruction.

Why also should soldiers be employed on fatigue work which has no connection with anything they would ever be called upon to do in the field? It is surely mistaken economy to take valuable and costly men away from instruction in their profession, in order to save the slight extra expense which would be necessary to give discharged soldiers of good character regular employment in performing necessary fatigue work—employment which would help to show both the Army and the public that the Government did not ignore the claims upon it of men who had served their country.

Out of the time thus saved from guard and fatigue duties, a portion could be employed in teaching the men individually—not theoretically in a room, but practically on the manœuvre ground, and without curtailing tactical instruction—how to cook their meals to the best advantage; how to make themselves serviceable shelters; how to make doubtful drinking-water safe; and a thousand and one other things with the appliances and materials they would be limited to on active service.

This would enormously increase the efficiency of our forces in time of war, by reducing the wastage of men from avoidable exhaustion and disease to a minimum, besides removing a fruitful cause of discontent with the men in time of peace.

By considering the men when possible, by doing what can be done to make them contented and happy during their service, and giving those of good character priority of claim to Government employment on discharge, we should not only cause them to speak well of

Army life when they themselves have left it, but also induce a large percentage of them to extend their colour-service.

No doubt some people will argue that this, if it took place on a large scale, would be undesirable, owing to its effect on the Reserve; but, as under the War Secretary's scheme for short service home battalions, this result would only affect appreciably the number of reserve men from the Foreign Service battalions, and would be more than compensated for by the increased efficiency of these battalions for war, and by a considerable saving in expense, this objection is not important.

Men are drafted to India at between the ages of 20 and 25; after serving there for 7 or 8 years, they are between 27 and 33—that is to say, in their prime. In addition, they are acclimatised; accustomed to the ways of the country; thoroughly trained under the most favourable conditions; and on the finest military training-ground in the world; and in every way far more fitted for service there than when they first went out.

Numbers of these men, if given their passage and three or four months' furlough in England, at the end of their first period of colour-service, together with priority of claim to Government employment on discharge, would be only too glad to return to their regiments for a further period of 5 or 7 years' service, which would still leave them at 40 years of age or under.

The actual cost of sending them back to India would not be any more than that of replacing them by new men, and the wastage through sickness and other causes after their arrival infinitely less.

Of course, it is understood that only men who could pass a severe medical examination would be accepted in this way.

With regard to the Reserve, that from the short service battalions would not be appreciably affected, while, in case of the necessity to send reserves to India—by far the most probable scene of our next war on land—it would be infinitely more desirable to have unacclimatised men in the reinforcements rather than in the forces which would be responsible for the first moves in the game, and have to bear the brunt of the first efforts.

In these days the success or failure of operations at the commencement of the first campaign have very far-reaching effects.

Let us now briefly consider the question of the Volunteers.

Much has been written and said for and against their efficiency as a fighting force as at present constituted, but of all the conflicting theories and opinions, two indisputable facts stand clearly out.

The first, that if properly organised and trained in peace time this force would be invaluable, if not absolutely indispensable, to the nation in case of our becoming involved in a serious war.

The second, that if treated seriously, and with reasonable tact and consideration by the Government and military authorities, there need never be any fear of a lack of men of the right kind to keep it up to full strength, or of members of the force willing to give their services to assist the Regular Army abroad in time of national need.

To get the full value, however, out of the patriotic feeling which undoubtedly exists, the Government must be prepared to encourage and utilise it practically, even though by so doing the Army Estimates should be increased. It must also be prepared to treat the

force seriously, and thus eradicate the impression that Volunteers simply play at soldiering.

To this end the force should be armed and equipped from rifle to transport in as up-to-date and thorough a manner as the Regulars. It would not be necessary to buy transport animals and vehicles for this purpose—a system of registration in each district of all animals and vehicles suitable for military purposes, and the payment of a small annual subsidy to the owners of as many as would be required for the use of the local Auxiliary Forces, would ensure transport always being available in each district for annual trainings or for war purposes at short notice, and for a moderate rate of hire.

All expenses of actual training, such as the provision of ammunition and rifle-ranges, cost of annual training camps, with cost of transport to and from them, etc., should be defrayed by Government.

On the other hand, no man should be accepted as a Volunteer who would not be considered physically fit for active service in the Regular Army, and, in addition, having regard to the short time which can be spared by the Volunteer during the year for military instruction and training, no man should be accepted for any branch who is unable to make a high percentage of hits, firing at a stationary target at a short known range, and for the mounted branches, who is unable to pass a thoroughly satisfactory test in riding also.

After enrolment, every hour of time available for training should be devoted strictly to instruction and practice in (a) shooting under service conditions (as nearly as they can be obtained); and (b) *bonâ fide* tactical training.

Close-order drill—beyond the very little sufficient to enable men to be moved as a disciplined body in convenient formations from one place to another—should be abolished.

Marching-past, Guards of Honour, and ceremonial parades of all kinds should be absolutely forbidden, in view of the fact that every moment which the Volunteer can spare for military purposes is urgently required for his practical training for war, if he is to be worth the expense which the country is put to on his account.

Inspections should be strictly confined to examination of corps and units in practical tactical exercises, shooting, and the skilful use of natural features of the ground as cover, both when moving and when halted.

Adjutants and non-commissioned officers of the Permanent Staff of Volunteer Corps should be most carefully selected with regard to their professional capabilities and methods of imparting instruction. In addition, it might even be advantageous to make all officers and non-commissioned officers qualify in a short course of instruction in Permanent Staff training duties before joining the Permanent Staff of a Volunteer Corps.

The uniforms of Volunteer Corps should be cheap, and should rigidly conform in material, colour, and pattern to the requirements of campaigning in this country during summer and winter.

It may be objected that to do away with ceremonial parades, and insist on a practically serviceable uniform, would remove two great inducements to Volunteers to serve; but this is by no means the case—the consciousness of being a picked man, of indisputable efficiency as a fighting soldier, and the knowledge that this efficiency is recognised and depended upon by the country and by the Regular Army, would be valued far more highly by 99 men out of 100 than the

pretty and doubtful pomp of indifferently performed ceremonial; and for the second part of the objection, it is quite possible to have a serviceable uniform which shall yet be very smart in appearance.

Lastly, officers and men should not be allowed to remain on the strength of corps after, from age or other causes, they have ceased to be efficient, and to this end the present qualifications for the "Volunteer Decoration" should be abolished and others substituted.

Under the existing organisation practically anyone may be a Volunteer. The Service is not taken seriously, and most Volunteer officers would regard the general use of their titles to Army rank as a subject for ridicule; whereas under the proposed modifications every Volunteer would be known to be a picked man.

Officers and non-commissioned officers would have reason to be proud of their rank as such, and would soon look upon the use of their Army titles in ordinary social intercourse quite as much as a matter of course as officers of the Regular Forces do.

Before leaving the subject of supply of *personnel* for the military forces under normal conditions, it is necessary to consider a question which is annually becoming more insistent and difficult, namely, the supply of officers for the Regular and Auxiliary Forces.

Up to comparatively recent times an officer's military duties and responsibilities were exceedingly light, and the military knowledge and attainments required of him very moderate. Provided that socially he was satisfactory and had means of his own, he could count on a congenial and pleasant career in the Army with little professional work, few professional ties, and a social position which gave him many advantages.

Under these conditions large numbers of young men, to whom professional pay was a matter of minor importance, were always willing to adopt the Army as an eminently gentlemanly and pleasant profession, offering them a sufficiency of excitement, change, and chances of distinction without occupying too much of their time.

Besides these, a considerable number of youngsters, mostly without much private means, joined with the intention of taking it seriously, and by application and hard work carving out a real career for themselves. Little encouragement, however, was given to regimental officers to try and excel as such, and there was no absolute necessity for them to do so, even up to quite recent times.

For this and other reasons such men soon recognised that their position in a regiment, at any rate in the junior ranks, was not suitable for the realisation of their ambitions, and moved heaven and earth to get out of it and into staff employ as early as possible.

The majority of those who failed to accomplish this became, after a few years, soured and embittered men, in whom the constant struggle against "red-tape" and the universal apathy blunted, if it did not destroy, all originality, initiative, and professional keenness and ambition. Thus, as modern conditions gradually caused the acquirement of modern military attainments to suit them to become increasingly important and necessary, an extremely bad state of affairs ensued.

From time to time individuals who had the real interests of the Service at heart did their best to introduce moderate reforms, but so strong were the forces of tradition and custom which opposed anything in the nature of a change that progress was slow and painful, until the South African War, fortunately for the country, opened

the nation's eyes suddenly and violently to the danger into which it had drifted, and made not only possible but compulsory many of the sweeping reforms which were necessary to bring the Army into a condition of comparative efficiency for modern requirements.

One of the first results of these reforms was that the military officer was almost immediately converted into an exceedingly hard-worked member of the community. He was given to understand that abilities and attainments which had satisfied the authorities up to that time would do so no longer, and that consequently if he wished to retain his position he must be prepared to set to work seriously to treat his profession as the principal object of his existence, and to spend the major portion of such time as remained to him after performing his military duties in increasing and perfecting his military knowledge.

At the same time, he recognised that the prestige attaching to his profession, and with it his personal position, had suffered considerably, partly as the result of the disasters of the late war, and partly through the ungoverned criticism of would-be reformers and others. He knew that he was liable to be called upon at any time to risk his life and health, not necessarily in fighting, which would offer him chances of distinction, but more often in military life and duties in an unhealthy climate, and in a place where he would be cut off from all the advantages of civilisation and his position.

He also knew that even if possessed of abilities and attainments which in almost any other profession would earn him success and a sufficient fortune to ensure a comfortable old age, he would still be liable to retirement with or without a small pension at an age when it is too late to start another career, and yet when one is still in one's prime.

Finally, he knew that his rate of pay, in spite of his enormously increased responsibilities, the increased demands on his time and abilities, and the increased cost of living, was about the same as that allowed to his predecessor in the time of Queen Anne, and that, small as it was, income-tax would be deducted from it before he received it, and it would be further diminished by compulsory expenditure for the constant, vexatious, expensive, and useless changes in the uniform and equipment with which he was obliged to provide himself.

What wonder if the young man with private means of his own begins to consider now whether the game is worth the candle, or the parents and guardians of the youngster, who will have to make his own way in the world, begin to doubt whether, by allowing him to enter the Army, they are giving him a fair start in life.

Possibly the time has not yet come when the increase of pay of officers of the Army is absolutely necessary, though undoubtedly it will come in a very few years now; but that some improvement in the regimental officer's position and prospects is urgently necessary, the increasing number of resignations in the junior ranks and the increasing difficulty in replacing them show beyond any possibility of doubt.

The following few reforms, which would cost the country very little, would materially improve the regimental officer's position:—

1. That no change be made in any article of clothing or equipment paid for out of the officer's own pocket unless approved of by the officers of the majority of units affected. Any proposed change could

be submitted to each unit in the branch of the Service which the change would affect, for the consideration and decision of the majority of officers in that unit. The decision of the majority of the units could then be acted upon.

In this way no change could be made without the approval of the majority of the individuals who would have to pay for, and, incidentally, to wear the article changed.

2. At every *dépôt* of the Royal Army Clothing Department there should be a staff of expert cutters for each branch of the Service to cut out and superintend the making of uniforms, etc., for officers. A portion of this staff should be employed in periodically visiting each unit to take orders and measure and fit officers.

The price charged should be sufficient only to cover the Government's expenses in this undertaking, and should not include any profits. At present the prices paid by officers to private tailors for uniform, etc., are ruinous, the profits made out of them being in many cases from 100 to 200 per cent. If really first-class cutters were engaged, even at high wages, and the business carried out in business-like manner, it would cost Government nothing to supply officers with uniform of first-class materials and workmanship at an extremely moderate price, and thus an immense saving would be effected in the officer's expenses.

3. The story of the officer who applied, giving his riding weight, to the authorities for a "regulation crow," when his claim for travelling expenses was returned to him for revision, illustrates one of the many inequitable drains on an officer's small means. If an officer in carrying out a duty is compelled by circumstances to disburse money out of his own pocket in order to carry out his orders, such money should be repaid to him by Government on his certifying on his honour that he is entitled to it, and his claim being recommended by his commanding officer, independently of there being perhaps no regulation which authorises that particular item of expense.

Such cases frequently occur in connection with journeys undertaken in the course of duty, or with regard to "lodging" and "servant's allowances" in places where an officer may be called upon to serve, and where it is impossible for him either to obtain the use of Government quarters or a soldier servant, or to provide himself with suitable substitutes with the money allowances authorised by Government for these purposes.

4. An officer, no matter where he may be stationed in the world, is obliged to pay income-tax to Government on the wages which Government pays him, and this when on active service in the field as well as in peace time.

Even in the case of those officers, the total of whose pay per annum is so small that it is exempt from income-tax, the tax is stopped, nevertheless, out of their pay monthly previous to its issue to them, and only repaid to them upon a rebate claim being made by them at the end of the financial year.

By all means, make officers pay tax on any private means they may have, if such means amount to a taxable sum, but not on their Army pay, which, even without being taxed, is insufficient in the majority of cases to cover their obligatory expenses.

Lastly, and most important of all, all Government employment which officers could carry out should be strictly reserved for men who have served in the commissioned ranks of the naval or military

(Regular or Auxiliary) forces of the country. The average naval or military officer is possessed of quite as much ability as the average civilian who is at present employed, and there is no possible question that the former is far more entitled to employment by his country after his naval or military service is over than the latter is.

A few reforms and concessions such as these and a more sympathetic consideration of the regimental officer's position and prospects conceded by the authorities *now* would probably postpone indefinitely the necessity for a large outlay, which otherwise is certain to arise within the next few years, in order to attract a sufficiency of suitable young men to officer the Army.

Having briefly considered the question of supply of officers for the Regular Forces as existing, it remains only now to see how we should be situated in this respect in case necessity should arise for a large augmentation of these forces during war.

It will be demonstrated in a subsequent portion of this essay that quite possibly it may become necessary at any time, not only to use up the whole of the reserve at very short notice, but also to largely augment our existing forces from the civilian population.

In modern warfare, too, the proportion of casualties among regimental officers is greatly in excess of that among the rank and file.

Where under these circumstances would the extra officers who would certainly be required come from?

At present we have a "Reserve of Officers," whose actual strength is well under 3,000. Of these quite 20 per cent. would be unfit for active service in the field. The remaining 2,000 odd would be quite inadequate; and though civilians who have once received an elementary military training can be made reasonably efficient in case of necessity in a comparatively short time for service in the rank and file, *officers* could not be obtained in this way.

A very practical and simple solution of this difficulty would be the creation of a new rank—"sub-lieutenant"—in the Reserve of Officers, and the appointment to it of as many specially selected non-commissioned officers from the 1st Class Army Reserve as might be considered necessary to ensure the keeping up to strength in any probable contingency of the subaltern commands in the Army.

Such men should be most carefully selected for appointment in the first place, and should then be required to undergo sufficient training annually to keep them in all respects up to date, while naturally they would have to be granted sufficient privileges to make it worth their while.

In considering the question of how best to expand our land forces in time of war, it is desirable first to calculate approximately what these forces might possibly be called upon to do.

Accepting as correct the theory of what is termed the "blue-water school," that the Navy will remain powerful enough to answer for any probable combination of hostile naval forces, and so protect the United Kingdom and its Colonies and dependencies over-sea from any danger of invasion by sea, or serious interruption of their sea-borne supplies, we still have to reckon with:—

- a. Raids from the sea, from which the Navy, admittedly, cannot guarantee us;
- b. Serious invasion of certain of our Colonies from their land frontiers; and

- c. Risings in the Colonies and the little expeditionary wars against natives and others in various parts of the world which we are constantly engaged in.

The existing trained forces of the Empire available for these various purposes are approximately as follows:—

1. *The British Army.*—Composed of:—

Regular Forces (including Regular British Troops in India and other Colonies and Dependencies) ...	267,354	(X)
Army Reserve	80,000	(Y)
Militia (U.K.)	132,446	(Y)
Militia Reserve	10,000	(Z)
Militia (Channel Islands, Malta, and Bermuda)	5,970	(Z)
Imperial Yeomanry	28,114	(Z)
Volunteers (U.K.)	346,136	(Z)
Volunteers (Bermuda)	448	(Z)
Total	870,468	

2. *The Indian Army.*—Composed of:—

Regular Forces (Native)	¹ 155,344	(Z)
Reserve (Native)	20,731	(Z)
Imperial Service Troops (Native) ...	14,917	(Z)
Volunteers (European)	31,966	(Z)
Total	222,958	

3. *Military Forces in the Colonies, etc. (exclusive of Regular Troops of British or Indian Armies).*—Composed of:—

Canada possesses an Active Militia numbering	40,730	(Z)
And Reserve estimated at	1,030,000	(Z)
Egypt	17,000	(Z)
South Africa	18,000	(Z)
Australia	40,000	(Z)
New Zealand	15,000	(Z)
Other Colonies and Dependencies (White Troops and Native Troops)	30,000	(Z)
Total	1,190,730	(Z)

NOTE.—Those marked (X) are available for general service in any part of the Empire, at any time.

(Y) are available for general service, in any part of the Empire, in time of war.

(Z) are only available for local service, or service in certain portions of the world.

Raids from the sea in time of war would necessarily take place suddenly, without warning, at places on our coasts which are more or less unprotected, and would have for their object the obtaining of

¹ Includes 2,519 British Officers.

as much loot and infliction of as much damage as possible, in the shortest possible space of time.

In most cases it might not be possible to concentrate mobilised troops in time to oppose the raiders, and consequently defensive operations would have to be carried out by the local population to a great extent.

It is obvious then that unless our civilian population receive military training in peace time, to enable them to use efficiently in self-defence, arms and ammunition, which could be supplied to them on the outbreak of war, occasions would arise during a war, when they would have to helplessly look on while an enemy did them and their property immense damage.

Of our Colonies and Dependencies over-sea, at least two are liable to serious invasion from their land frontiers.

In case of war with Russia, that country would infallibly invade India. At the present time it is true that we should not have much to fear from such an invasion, not because of any weakening which Russia may have received in her struggle with Japan, but because that struggle has shown beyond any possibility of doubt that the training of her armies is absolutely unsuited to modern warfare against any nation which has progressed ever so little with the times. It will take some years, probably several, before Russia can hope to reap much benefit from what she has learnt, because modern warfare requires intelligent initiative on the part of the individual private soldier, as well as efficiency in the officer who leads him, and the Russian private soldier comes from a class which at present is absolutely uneducated, has but little intelligence, and from whom years of repression have driven out all initiative. Moreover, his military training, up to the present, has merely intensified these failings.

Men who cannot shoot, whose sole idea of fighting is to try and get to close quarters with the bayonet, who have to be taken into and out of action in close formations, and who continuously require a superior's initiative and orders, are useless under modern conditions, no matter how large their numbers or how brave and devoted they may be individually, even if led by good officers and disposed by experienced generals.

But we cannot count on Russia remaining in her present state. She has now had up-to-date and convincing instruction and experience in the best and hardest of all schools, and presumably she will benefit by it.

If she does, we may, provided she is sensible enough to hold her hand for the next few years, have cause to look upon an invasion of India as an infinitely greater danger than it is at present.

If Russia decided to invade India, she could, at the outset, place, at the very least, 300,000 men in the field, and would, in addition, have an inexhaustible reserve from which to replace casualties.

To oppose them we should have available to take the field, at short notice, about 160,000 good troops, not more than 70,000 of which would be British. By denuding the United Kingdom of trained and efficient Regulars, Reserve, and Militia, we could, perhaps, in the course of six weeks or two months, bring the total of our Indian Field Army up to 300,000 men. But, under present conditions, we could not safely do more, even supposing that our continental neighbours did not take advantage of our hands being full.

It is obvious then that our capabilities would not be equal to meeting the demands of more than the first few months of what would assuredly be a fairly lengthy war, unless we could *usefully* augment our existing forces very largely from the civil population of the United Kingdom and our white colonies.

With regard to risings in the colonies, our recent experience with the Boers affords an excellent illustration of what our forces may be called upon to do under this heading, and again we are brought face to face with the fact that, failing conscription, the capability of an almost indefinite, and, at the same time, *profitable*, expansion of our recognised existing military forces, is absolutely necessary for the safety of the Empire.

To ensure the capability of a rapid, adequate, and, at the same time, *profitable* expansion of the existing military forces of the nation in time of war, the first essential is, that a certain amount of military training should be made compulsory by law for every able-bodied boy when at school.

If it were found possible afterwards to extend the principle, so as to compel every able-bodied man up to the age of, say, 35, to undergo a short course of instructional practice, in rifle shooting and the art of skirmishing, *annually*, it would, of course, be of incalculable benefit to the nation; but the compulsory instruction of all boys at all schools should be introduced at once.

Ordinary education is now compulsory, and, as a practical nation, we must recognise the necessity, failing conscription, of universal training in the elements of military requirements also, if we are to successfully meet the possibility of a grave national crisis.

If this plan were once adopted in the Mother country, the Colonies would soon follow suit, and in a very few years, in time of need, besides our ordinary reserves, we should have a practically inexhaustible source from which to draw men, who, though not at first perhaps equal to trained troops, could very soon be made wonderfully efficient.

Men who have learnt the rudiments of military requirements and how to handle and use a rifle, practically, as boys at school, could afterwards, in a very few weeks, be made into a valuable fighting force, the necessary supplementary training being carried out at convenient centres in their own districts, by selected retired officers* and non-commissioned officers, or those who for some reason were at the time incapacitated for active service in the field.

We know from our experience at the time of the South African War, that in time of national peril, the patriotism of the Empire is equal to practically any call upon it, and we also know from the Boers, from some of our Volunteer and from the Irregular Corps recruited from our Colonies, that men who can handle a rifle, and who possess the rudiments of military knowledge, can, especially in their own country, do invaluable work, and are by no means to be despised if well handled, even by thoroughly-trained troops.

Of course, it would be necessary to lay out a fairly large sum on the construction of miniature and other rifle ranges throughout the country, and for the annual supply of practice ammunition, also to maintain large reserves of arms and ammunition ready for emergencies; but the cost and inconvenience of this and of universal training is one of the penalties of empire in an age when we are liable to rapid

and powerful hostile combinations. It is the only satisfactory alternative to conscription.

We know from painful experience, both in our own case and in that of other nations, that it is infinitely cheaper in the long run to be prepared for emergencies than to trust to luck and abnormal efforts and sacrifices, when they actually occur.

To find three striking illustrations of this fact we have only to turn to the case of France in the Franco-Prussian War; our own in South Africa; and Russia's in her war with Japan.

It is of no use to argue that our Navy immunises us from risk. It could not prevent our colossal expenditure, losses, and disasters in South Africa, and it would be equally powerless to save us in India (to mention only one of our vulnerable colonies), in case of an invasion of that country by Russia.

If we are to remain the richest and most powerful Empire in the world, we must accept the responsibilities which such a position entails, otherwise the time will infallibly come, and that in the not distant future, when we shall be stripped of our colonies, and sink into decay, as so many other once powerful nations have done before us.

"NUNQUAM NON PARATUS."

SIXTH SPECIAL MILITARY ESSAY, 1905.

Subject:—

“THE BEST, LEAST IRKSOME, AND LEAST COSTLY METHOD OF SECURING THE MALE ABLE-BODIED YOUTH OF THIS COUNTRY FOR SERVICE IN THE REGULAR OR AUXILIARY FORCES AS EXISTING, AND FOR EXPANDING THOSE FORCES IN TIME OF WAR.”

By Major J. F. CADELL, R.F.A., Secretary R.A. Institution.

“Pro Rege et Lege.”

INTRODUCTION.

THE problem which is presented to us in the set terms of the title of this essay is none other than our old friend the recruiting difficulty, and the conditions of the problem are such as to debar us at the outset from taking into consideration any high-flown and very possibly impracticable scheme of Army Reform. Schemes of Army Reform are always with us, but such displays of mental gymnastics may well be left to the budding politicians and amateur warriors who hope to earn cheap popularity, or further their own ends by clap-trap denunciation of the Army and all its ways.

The best and least costly method of securing *their* services for the benefit of their country—if indeed any of them should chance to be able-bodied male youths—would be conscription; but unfortunately this simple and efficient method of solving the recruiting problem with the aid of the Army reformer carrying a rifle in the ranks, is put out of court by the conditions of the problem set before us. For conscription, or compulsory service, must of necessity be more irksome to the individual, be he Army reformer or shoeblack, than any form of voluntary service.

Moreover, even if compulsory service were not entirely ruled out of court by the condition as to irksomeness, it must be obvious to any unprejudiced observer that the prospect of compulsory service being introduced, even in the modified form of the Militia ballot, has become, since the final stages of the war in South Africa, exceedingly remote. At one time in the early part of the war—probably in that black month of December, 1899, when troubles came thick upon us—it might have been possible to introduce some form of compulsory

service without the risk of popular upheaval. The advantages of adopting compulsory service at such a juncture were doubtless allowed their full weight, but the balance fell on the side of voluntary service. Volunteers came forward in great numbers; counties woke up to the fact that their regiment had a claim on them; and a few short months of voluntary effort, in which both high and low, rich and poor, took their share, put back the clock of conscription for a generation at least. Not till our people feel their lives and property endangered by an invader on their shores will they consent to compulsory service.

Moreover, our problem is still further conditioned by the two last words of the terms in which it is presented to us. For it is clear that service in our Regular and Auxiliary Forces *as existing* cannot include service in a Militia transformed in part into a Home Service Army, as proposed by Mr. Arnold-Forster, nor can it include service in a local Militia formed out of the dry bones of an extinct Volunteer Force, as has been so often proposed. Nor can any other large schemes of Army Reform be taken into account. It may be assumed, however, that proposals to modify the actual conditions of service in any part or the whole of the Regular and Auxiliary Forces will be quite legitimate, for if no modifications were necessary or permissible there would be no problem for us to cudgel our brains with.

SUMMARY.

Our problem, then, may be re-stated as follows:—

“The best, least irksome and costly method of securing the male able-bodied youth of this country for service in the Regular and Auxiliary Forces as existing” must not be sought for in any scheme of compulsory service — the will-o'-the-wisp after which so many theorists are wont to struggle—nor yet in any of the transformation scenes which are so fondly entitled Army Reform, but in such modifications of the conditions of service, including pay, pension, promotion, and employment, as well as many other factors as will commend themselves to the minds of those best acquainted with our soldiers and the classes from which they are drawn.

PART I.

EXISTING CONDITIONS.

A. REGULAR ARMY.

Before discussing any proposed modifications in the conditions of service of our Regular Army, it may be as well to review briefly the existing conditions, and endeavour to ascertain their probable effect on recruiting.

Length of Service.

At the present time enlistments for the infantry of the Line are for nine years with the colours and three years in the reserve, but recruits for the Guards are still enlisted for three years with the colours and nine years in the reserve. In the cavalry and artillery the period of service is the same as before, but they are now closed to recruiting, while the Royal Engineer drivers, who for many years were enlisted

for three years with the colours, are now only required to serve for two years with the colours and for ten years in the reserve.

Immediately before the present condition of affairs as regards enlistment, all recruits for some two years after the war in South Africa were enlisted for three years with the colours and nine years in the reserve. Unfortunately, owing to the reduction of establishment which became necessary at the end of the war in South Africa, a number of districts were for some time closed to recruiting, and the fluctuations in the number of recruits called for from time to time during the period of these changes, prevent any deductions being made as to the effect on recruiting of these different periods of service with the colours. More recently, it is reported that the introduction of a longer period of service with the colours has had a detrimental effect on recruiting. A recent return showed that in the nine months, subsequent to 1st October, 1904, only 18,853 men had enlisted, as compared with 22,500 in the corresponding period of the previous year. It must, however, be remembered that "corresponding periods" are by no means trustworthy for purposes of comparison, for the recruiting market is directly dependable on the labour market, and the latter is subject to very great fluctuations.

While proposals as to new conditions of service belong more properly to a later section of this essay, it may not be out of place to remark here that in the recruiting market there is an irreducible minimum among those who present themselves for enlistment, who would be just as willing to serve for nine, or even twelve, years with the colours, as for two years or three years, provided always that they are going "soldiering," as they often phrase it, and are not intended to become mere stay-at-homes. These lads enlist either for the sake of change and adventure, or because they have had a row with some one. In seven cases out of ten there is a woman in the case—mother, mother-in-law, or sweetheart. Such, at least, is the writer's opinion, based on experience gained while acting in charge of a large recruiting office, and it is one with which most recruiting officers will probably agree.

In this connection it should be remembered that the three years' period of colour service was introduced, for the Line, concurrently with the seven years' colour service, for some time before the latter was abolished in favour of the former; but enlistments for three years' colour service were restricted to a small percentage of the whole. In the recruiting district with which the writer was concerned, enlistments for the shorter period were few and far between. Possibly, this was due to ignorance on the part of the recruits, but more probably it was due to indifference; as the recruiting sergeants would probably not press the shorter service on their notice, for fear of exceeding the limited percentage. However, it is easy to dogmatise, and probabilities are, in themselves, of little avail unless based on sure and certain principles. These principles must be sought for in the adaptation of the conditions of a soldier's life to the spirit of the time in which he lives.

Pay.

Considerable efforts have been made of late years to secure a clear shilling a day to the private soldier. Absolutely necessary stoppages have been reduced to a minimum, and consolidated into a fixed amount, which may not be exceeded. An addition of pay, vary-

ing from twopence to sixpence a day, is granted after two years' service—the scale varying according to the soldier's musketry efficiency. Barrack damages have been reduced to the least possible amount, except in cases of wilful damage. These advantages are, however, to some extent, counterbalanced by the inevitable deductions which almost invariably accompany all increases of pay granted to the soldier.

Service pay is granted, but good conduct pay is abolished. Messing allowance was introduced some time ago with a flourish of trumpets, but deferred pay was withdrawn at the same time, and the resultant increase was but a trifling one. Moreover, neither service pay nor messing allowance benefit the recruit, for he must serve two years to gain the former, and must complete his musketry training, and attain the age of nineteen, before he can draw the latter allowance.

Notwithstanding these objections, it may be conceded that the present rate of pay is ample. "The soldier is well fed, well clothed, and has all the money he wants," is the usual verdict of the regimental officer. Of course, more recruits, and possibly of a somewhat better class, as in the case of the Royal Engineers, may be obtained by a sufficient increase of pay, but we are concerned at present with the consideration of the *least costly*, as well as the best method of obtaining recruits, and large increases are obviously out of question. Moreover, they are not necessary, for the actual value in the shape of pay, clothing, and housing which the soldier receives in return for his services compares very favourably with what he would receive in civil life. In fact, the prevailing disinclination to enlist cannot well be attributed to the scale of pay, but the reasons must be sought for in other directions.

Promotion.

Potentially every recruit may be said to carry a marshal's *bâton* in his knapsack, but practically such is not the case. The number of general officers who have risen from the ranks is extremely limited, and even those who have attained field rank from the same source are far from numerous. It is seldom, however, that a man born in that state of life from which a majority of those in the ranks are sprung is endowed with the temperament, ability, and adaptability which will enable him to rise from the lower ranks of the people to the rank of an officer, without resembling, and doubtless feeling rather like, a fish out of water.

We see in every-day life that the elevation of a family from the lower to the higher grades of society is seldom accomplished in less than two generations. Hence it is the ambition of an energetic warrant officer to send his son to the University and make him a gentleman, though no one knows better than himself that it is too late for him to attain that ideal in *propria persona*. He may be, and often is, a thorough gentleman at heart, but the outward polish and *savoir faire*, which are so important in society, are beyond his reach.

The average prospects of promotion are good enough, but it does not take long for the recruit to find out that promotion is very "chancy." One man may go six years before he finds himself a "Lance-Jack," while his comrade gets his stripe in half the time or less; and the man who has had to wait the longest is quite possibly the better man and the more efficient non-commissioned officer of the two.

Nevertheless there can be very little doubt that the active, keen, and energetic man invariably gets his chance of promotion, and the better educated he is the sooner does that chance come. If he does not take that chance when it comes, it is his own fault, and he has only himself to thank. It may be pointed out here that the suggested abolition of Army Schools would do incalculable harm to the Army. The young and keen soldier who is well advised takes the chance of improving his education which is now open to him. It is wonderful to see how these young fellows, often with the special encouragement of their officers, will give up their games and work hard at school in order to get their "second" or "first" class certificate of education, and thereby qualify for promotion. Doubtless the children might in many cases be educated outside the barracks, but if the Army Schools were closed recruiting would suffer.

Taking things as they are, however, we may conclude that the prospects of promotion do not materially affect the recruiting problem, so far as the class which is at present principally recruited is concerned.

Foreign Service.

It is not easy to gauge the effect of foreign service on recruiting, but there are one or two points which are worthy of consideration. In the first place, it may be accepted as true that the majority of British youths are animated by a spirit of adventure. Home ties may prevail, but for the most part they desire to go out into the world and see for themselves what other people and other places are like. It is common enough to talk of our insular prejudices, but in reality our upper and lower classes are permeated by a spirit which is the very opposite of insularity, and which finds expression in such phrases as "Greater Britain," "Pan-Britannia," and the like. Few families in either of these classes have not got some relation who is residing in or has returned from "foreign parts." Hence the young fellows of both classes are naturally anxious to find out for themselves how much truth there may be in the yarns they hear. Insularity flourishes in the middle class, whose interests are often narrowed to their own orbit, the dimensions of which are almost infinitesimal. In the lower classes, however, as in the upper class, a young fellow has little or no stake in the country, and is not on the look out to go into the business and eventually step into his father's shoes; hence the desire to go abroad and see the world is strong and one to be reckoned with.

This spirit has a considerable effect on the supply of recruits, but it is to some extent counteracted by the advice of parents. These are naturally loth to let their sons go so far away from them, but are still more influenced by the fact that so many old soldiers, especially those who have served abroad, are unable to get any employment when they leave the Army. The enervating effect of the climate of India and other tropical stations adds to the difficulty experienced by so many old soldiers in obtaining employment. Hence even though the sons are attracted to the Army by the glamour of the uniform and the tales of soldiers, their fathers and mothers see the latter too often drifting into a mere wastrel, and oppose their son's intention with all their parental influence. So even in the matter of foreign service the question of future employment is all-important.

Future Employment.

In the annual report of recruiting for the year ending 30th September, 1904, it is stated that out of 25,498 men who have been discharged or transferred to the Reserve with a good, very good, or exemplary character, no less than 21,815 ex-soldiers have been *provided* with employment, though on reference to the table accompanying the report it is seen that out of the latter number, 10,481 obtained employment for themselves, and only 1,554 obtained employment under the War Office, while the great majority obtained employment through the National Association or Soldiers' and Sailors' Help Society. It is evident from the figures that 3,683 men who had emerged from the ordeal of several years' military service with a satisfactory character were unable to obtain employment, and the remaining men, whose military characters could not be described as good when they were discharged or transferred to the Reserve, were apparently considered unworthy of any kind of employment; yet many of these men had only committed some fault of a comparatively venial nature from a civilian point of view. The figures, too, are somewhat misleading, for it is well known that ex-soldiers very frequently do not retain their employment for any great length of time owing to their being unfitted for the particular employment which their necessity has driven them to accept. In these days when machinery is so largely used, the mere unskilled labourer is of no account. Even young lads are soon promoted to the position of "hands," and the anæmic narrow-chested youngster who has picked up some knowledge of a particular machine or special duty is worth more to an employer than the strong and healthy ex-soldier; or it may be that the ex-soldier is too old and too proud to learn until compelled to do so by the claims of hunger.

The chief reason, however, why the ex-soldier so often becomes a mere rolling stone is that he is not made to work in the Army. He gets splendid exercise and develops into a magnificent animal with perhaps strong sporting instincts, but he gets very little hard physical work, and naturally is disinclined to put his shoulder to the wheel when he leaves the Army. Ex-sappers and ex-gunners seldom have much difficulty in obtaining employment, for they are used to work, and are generally handy men.

Very little, too, is done by Government in the direction of finding employment for ex-soldiers. The annual meeting of the National Association for the Employment of Reserve and Discharged Soldiers was held at the Royal United Service Institution, London, on 16th May last, under the presidency of H.R.H. the Duke of Connaught, and Lord Roberts, Lord George Hamilton, Sir Neville Lyttelton, and various other distinguished people were among those present. It was very noticeable that one chief complaint ran through all the speeches, namely, that no Government Department, except the War Office, employs any considerable number of discharged soldiers, although there were numerous places which they could fill as well as civilians, and some for which they were much better fitted. The Chairman of the London and South Western Railway Company showed that they at least had not neglected the ex-soldier, for in 1904 they were employing over 1,000 discharged soldiers.

The statement as to the non-employment of ex-soldiers in public offices may come as a surprise to many, for the question has been re-

peatedly ventilated of late years, and the general impression of the official attitude has been: "We have done all we can; but this is a question which must be dealt with by the large employers of labour." The inaccuracy of this impression was demonstrated by the Duke of Connaught at the annual meeting of the National Association referred to above when he stated that he thought it only right that the attention of all Government Departments should be directed to the matter, since during last year outside the War Office only nine ex-soldiers had been employed in the whole of the Government offices. The reasons for this state of things is not very obvious, but it would appear that there is a dislike to ex-military subordinates in some of the civil departments, which extends to officials of high position, who would not be expected to show such a feeling. It is claimed, for instance, that civilian messengers are far more intelligent than ex-soldiers; but the futility of this argument is plain, if we realise that there is now a considerable range of choice in employing ex-soldiers. Formerly old men or at least veterans prematurely aged with war and service in unhealthy climates were the only men procurable by those who wished to employ men who had passed through the ranks. In these days ex-soldiers are not old, and men who are still quite young and of every degree of education are only too eager to obtain honourable employment after leaving the Service. "We fear," says the *Pioneer*, in an article on the employment of ex-soldiers (14th July, 1905), "the difficulties that are found to arise outside the War Office, and on which H.R.H. the Duke of Connaught commented somewhat strongly, are due to the ingrained antipathy to soldiers and soldiering which has come down from the days since the bugbear of the nation was a 'Standing Army.' Men who ought to know better—men of the highest education—frequently cannot cure themselves of a sneaking belief that the Army is a society on a level of its own. They will deny very hotly that they have any such idea, but it is there under the skin none the less. It is that idea which makes men carry the excellent constitutional principle that Parliament must retain control of the Army, to the extreme of denying any administrative powers of the larger kind to any soldier. It is the same idea that makes men prefer any civilian to any soldier in subordinate positions. They seem to forget that in the ranks men learn to be clean and obedient, if nothing else, and the difference in these respects, and also in physique, between the trained soldier, on the one hand, and the small city shop boy and the country yokel on the other, is very great—greater than most people realise."

We conclude, then, that under existing conditions the prospects of the ex-soldier obtaining employment on leaving the colours are by no means good. At the close of the war in South Africa a number of ex-soldiers and reservists were thrown on the labour market, and many were reduced to beggary and want. But little effort was made by Government to remedy this state of things, and it has probably done more harm to recruiting than any measure of recent years.

The Marriage Question.

Under existing conditions the number of men other than non-commissioned officers who are married "on the strength" is so small that the inducement to enlist afforded by free quarters for married men may be ignored altogether. The fact that promotion and the

chance of getting married go together, is a further inducement for a young man to strive for promotion; but it is obviously most improbable that any recruit would enlist in the hope of being able to marry at an early date. Moreover, it is equally unlikely that any would-be recruits are deterred from enlisting, under ordinary conditions, on account of the remote prospects of matrimony, though possibly a very few might on this account fight shy of enlisting for the long period of colour service now in vogue. The prospect of early marriage as an incentive to military service may at first sight seem a preposterous idea, but it must not be forgotten that most respectable men of the lower class look forward to an early marriage, and if they are to be attracted to the Service it will be necessary to make concessions to meet their views. This question, however, now passes for consideration to Part II. of this essay.

B. AUXILIARY FORCES.

Militia.

There are two classes who enlist in the Militia: Those who want to join the Regular Army and those who do not. The former class find it an easy and cheap method of getting the physical training necessary to develop their bodies to the requisite standard for enlistment in the Regular Army, and are therefore not in need of any special inducement to cause them to enlist in the Militia. So far as the requirements of this essay are concerned, they may therefore be ignored. The other class vary much in different districts, but when local circumstances admit of their doing so they will generally come forward in sufficient numbers. If, however, the place and time of assembly is not suited to meet their convenience, it is unlikely that they will sacrifice their private interests for the public welfare.

A very careful study of local conditions is, however, necessary to enable any one to form an opinion as to the reasons why recruits come forward in some districts and not in others, and it appears quite impossible to lay down any hard and fast rule in this matter.

Yeomanry and Volunteers.

These two branches of the Auxiliary Forces may be considered together, as in neither case do the men receive any direct remuneration for their services. Why, then, do they enlist? The answer to this question is not always quite obvious, but on consideration it will be seen that the Volunteer looks upon his corps as a sort of club where he enjoys the society of his fellow-men, and in which all the members are bound together by a common tie—the consciousness of effort to improve themselves. The privilege of wearing uniform is an additional incentive, for it gives the wearer an advantage over his fellows in the eyes of the girls. Moreover, it is essential that the efforts of the Volunteer should be taken seriously, if recruits are to be attracted. The corps in which the hardest work is done is generally the most flourishing, provided that the demands made on the men do not interfere with the claims of civil life.

The recent regulations as to attendance at camp have had a disastrous effect in the case of some corps whose members were unable

to comply. It is possible that their officers, if appealed to, would have been able to suggest some other way of obtaining the requisite standard of efficiency, which would not have clashed with the personal interests of the men.

PART II.

PROPOSALS.

A. REGULAR ARMY.

Length of Service.—Throughout this essay it is assumed that our Home Defence Force will be provided by the Auxiliary Forces, and that under the head of Regular Army we have only to deal with considerations affecting an Army whose first and foremost duty is to be ready to take the field in any part of the world and provide for the defence of those of our over-sea possessions which do not provide sufficiently for themselves. Of course, that portion of our Regular Army which remains at home will be available for home defence so long as it is not wanted elsewhere, but practically we may consider our Regular Army as a Foreign Service Army.

Now, in fixing the most suitable length of service, there are three courses open to us:—

- a. We may argue that our best plan is to enlist recruits for a short period of colour service in the first instance, which may be as little as two years—the shortest time usually considered necessary to “make” a soldier. On completing this period, *if we think the man worth retaining*, we may offer him such inducements in the shape of pay, furlough, married establishment, and future employment, as will make it worth his while to re-engage for the whole or the greater part of the remainder of his twelve years of service. The term of twelve years appears to have some occult value, and at all events may be accepted for the sake of argument.
- b. On the other hand we may think it best to secure our men for long colour service, eight or nine years, or even more, from the first, and in order to attract them, we may decide to offer sufficient inducements from the time they enlist.
- c. We may select an intermediate period of service, say five or six years with the colours, and be content to offer sufficient inducements to obtain recruits, without attempting in any way to offer additional inducements to men to re-engage on the expiration of their colour service.

Now, in selecting any one of these courses, we are more than likely to have to make a leap in the dark. We know, it is true, that when the short colour service of three years was introduced, men would not re-engage for further service in any great numbers, but it is obvious that the inducements were insufficient. Again, we know that since the long colour service of nine years came into force, recruiting has fallen off, and again it is obvious that the inducements for a man to tie himself down for nine years were insufficient.

Too much importance, then, should not be given to the actual period of service, but we should rather endeavour to offer such inducements as will enable us to approach most closely to the ideal of "Free Trade in the Army." This phrase is generally used to denote employment on the same terms as civilian labour is obtained, and while it is obviously inapplicable in its loosest phase, to the needs of an army, for discipline would necessarily suffer, it may be conceded that an army in which every man is content to serve is likely to be the best and most reliable.

To turn, then, to our inducements:—

Marriage.

It may be thought that the writer attaches too much importance to this question, but an army in which many of its soldiers are so weakened with disease, as to be unfit even to march, is so much the less efficient. If the question of cost is taken into account, as it must be in this essay, it must be remembered that it is cheaper to pay for quarters and rations for the wife of an efficient soldier, than to pay for the maintenance of a soldier who is only half a man. On these grounds a considerable increase to the married establishment is very desirable in the opinion of the writer. At home the expense would not be great, for married men might live out of barracks and draw, perhaps, half a ration extra. In time of war they would get separate allowance. Abroad, however, there are many difficulties to be met, but these must be faced. In the first place there should be a considerable period of qualifying service before a man could get on the married establishment—possibly five years or more, and a very good character would be necessary. Still, the inducement to keep straight in the hope of getting furlough and bringing a wife out would be considerable.

The institution of a Provident Fund, too, would be of invaluable assistance. If every man was compelled to contribute one shilling a month, an income of £90,000 would be obtained. Of course, this is only a tentative suggestion, and the figures would be modified to suit the actual requirements. Such a fund, however, would provide to some extent for widows whose husbands died abroad, find them passages home, and contribute to their support. The average soldier is very charitably disposed, and there should be no great difficulty in establishing such a fund.

Pay and Promotion.

As we have already seen, the pay is sufficient to provide men with all they want. In the Royal Engineers and Departmental Corps, where the men are better paid, they either save up their money to help their relations, or to get married, or they waste it in drink, etc. The private soldier does not really require any higher pay. But what is enough for one is not enough for two or more, and if an increased married establishment be conceded, it might be better to allow a higher scale of pay at the end of the qualifying period of five years, or whenever it may be, in lieu of extra rations, etc. The married man should, however, be allowed to purchase rations at contract rates.

As regards promotion, there seems no special reason for altering the regulations, but some effort might be made to equalise the flow, so that men might not smart at what they consider is the injustice of having to serve under others far junior to them in service, but who have had the luck to pass them by. This, however, is a very difficult question, and the writer only ventures to draw attention to the very strong undercurrent of feeling which exists.

Foreign Service and Furlough.

We have already seen that the prospect of going on foreign service attracts some recruits, while it deters others from joining. It is, of course, almost impossible to judge of the probable relative proportion of men attracted or repelled on this account, but there can be no doubt that the numbers attracted would be largely increased if furlough home were allowed in a more liberal manner than at present. After four or five years' service abroad, every man of good character should have a chance of furlough, if he is serving, or willing to serve, on a long engagement.

Future Employment.

This is the crux of the whole recruiting question. If employment were guaranteed to ex-soldiers, there would probably be no difficulty about obtaining recruits. All the various panaceas for dealing with the recruiting difficulty are of comparatively little value compared with a scheme for guaranteeing future employment. Lord Roberts' scheme for universal training of lads would do an immense amount of good, but it would attract very few additional recruits, unless the conditions of service were "good enough," and the most important condition which would be considered good enough, would be a guarantee of subsequent employment.

The claims of the soldier and the sailor to Government employment have been urged over and over again. Some little has been done, but how little that is we have already seen. The one thing really essential is, to pass a law reserving employment in the subordinate offices of all the great public offices for men who have served the State in the Army or Navy. Such appointments as junior clerks, copyists, messengers, door-keepers, etc., could well be filled by ex-soldiers, and the reservation of such appointments for those who have served the State would attract numbers of young men of the middle and lower middle classes, who now prefer to take their chances as shop assistants, bank clerks, etc. Young men of this stamp, if of sufficiently good physique to join the Army, would have an admirable chance of getting early promotion, and, if certain advantages were given to non-commissioned officers, as shown below, there would be an additional inducement for them to enlist.

Again, ex-soldiers and sailors might have the first claim for employment in all the arsenals, Government factories, and dockyards, and all men employed on the construction and repair of barracks, manufacture of stores, etc., should be ex-soldiers.

It follows, of course, as a necessary corollary, that more opportunities should be afforded for men to keep up a knowledge of their trades or civil employment, during the time they are serving. Much might be done by extending the scope of work to be done by regiments.

The outlay on workshops might be considerable, but it should not be impossible to run these on a commercial basis, and obtain some return for the capital expended. Regiments, for example, might undertake all the more simple repairs required in their own barracks. This is done occasionally now, but it should be the universal rule. Clothing might be made as well as fitted; the operations of the shoemakers' and saddlers' shops could be easily extended, and in various other ways regiments might be far more self-supporting than they are at present.

Another opening for the employment of ex-soldiers is the Police Force. In his speech at the meeting referred to above, the Duke of Connaught strongly advocated that the ranks of the police should be largely filled with men whose term with the colours is ended. The Post Office does employ a considerable number of ex-soldiers; but this number might be enlarged.

Finally, the civilian must realise that if he wants to avoid compulsory service it is essential that he should make the soldier's path an easy one, and that the man who serves his country in the field has the best claim to Government employment at home.

Non-commissioned Officers.

Some months ago General Bengough advocated tapping the middle or yeoman class in order to obtain a supply of non-commissioned officers. "My proposal, then, is," says he, "that this source of supply, offering as it does such excellent material for the purpose, should be made available by offering appointments as cadet non-commissioned officers up to a certain proportion, say fifty per cent., of our non-commissioned ranks, on the condition of the candidates producing a certificate of education equivalent to a first-class Army certificate, and a certificate of good conduct from some responsible person, such as a Justice of the Peace, or a clergyman of the parish. The cadets should be required to serve for one year in the ranks, at the end of which time, if found satisfactory, they should be at once promoted to the rank of lance-corporal.

"Under this system the following advantages would, it is submitted, be obtained. There would be a constant supply of good material for non-commissioned officers—an advantage that would be appreciated by commanding officers of all units who have experienced the common difficulty of finding in the ranks material for good and reliable non-commissioned officers. The superior standing and education of such cadet non-commissioned officers would leaven the whole body of non-commissioned officers in a regiment, would make discipline more effective, and at the same time ensure its being maintained with less friction, and would supply material capable of being trained by a proper system of education up to any desired standard of military efficiency.

"Against this plan it may perhaps be urged that it would militate against recruiting; but the number of recruits who are attracted by the prospects of promotion is, in our Army, very small, and by continuing the present system for a percentage of the non-commissioned rank, this objection, such as it is, would be still further minimised."—*Broad Arrow*, 22nd April, 1905.

This proposal was favourably commented upon at the time, and it was generally assumed that men of the classes referred to would be likely to come forward if they were certain of preferential treat-

ment and an early prospect of sharing the comfort of the sergeants' mess. These inducements would doubtless have a considerable effect; but the prospect of long service or of future employment is an essential condition.

It is very desirable, too, that our non-commissioned officers should be granted additional privileges. An "Ex-Non-Com.," writing in the August number of the *United Service Gazette*, states that "non-commissioned officers nowadays are not so distinct a class, and are not treated with the same respect as formerly." The reason for this appears to be that many additional privileges have been granted of recent years to the rank and file, but the status and privileges of the non-commissioned officer have not progressed in equal ratio. The majority of sergeants have no separate place to sleep in, and have to do their clerical work in the barrack-room. "Ex-Non-Com." says: "To render the Army sufficiently attractive to the better and more educated class of recruit, the higher non-commissioned ranks should possess outstanding and alluring advantages. To enumerate a few of these: Every non-commissioned officer of the rank of sergeant and upwards should be assured of accommodation adequate to his rank.

... each regiment should possess a properly furnished and comfortable corporals' room, sergeants' messes, and billiard rooms; dress should be distinctive according to rank; all concessions of pay should be proportionate; and, most important, every full non-commissioned officer should be permitted to wear plain clothes off duty, and have every reasonable degree of freedom in leaving barracks."

Many of these privileges are already conceded in principle, adequate accommodation and comfortable messes being provided in new barracks; but the evil day—in the eyes of Government—when old barracks must be brought up to the standard of new ones is continually postponed, and recruiting must suffer in consequence.

Dress.

The emphasis laid on dress by our "Ex-Non-Com." shows how important this matter is to the soldier, who lives in his uniform, whereas the officer merely dons his for purposes of parade, etc. Frequent changes of uniform are likely to have an injurious effect on recruiting, and wonderful caps of strange appearance which do not happen to be admired by the girls do more harm to recruiting than even a slight reduction of pay would do. A serviceable motor cap for active service and a smart forage cap for walking out are the chief requisites in the way of uniform; but it is also very important to give the soldier a decent pair of boots to walk out in. "Army" boots are all very well for marching, but they don't look well on the pavements, and if recruits are wanted they must be attracted by such things as appeal to them.

As mentioned by "Ex-Non-Com.," all full non-commissioned officers should be allowed to wear plain clothes when not on duty, and all soldiers should be allowed to wear them when on furlough or leave, and should be allowed to go away and come back in them, or the concession is of very little use.

Barracks.

Much has been done already to make the soldiers' barracks less like a prison and more like a home; but much remains to be done.

New barracks are built in which all sorts of modern conveniences and comforts are provided, but most of the old ones remain unaltered. Hence it is natural enough that men quartered in old-fashioned barracks should notice and grumble at the difference between the accommodation provided for themselves and that enjoyed by their more fortunate comrades.

Dining-rooms are being gradually introduced and are found very beneficial, for they admit of the adoption of the "restaurant system," which is deservedly popular when properly managed. It is not, however, welcomed as an improvement when the whole arrangements are handed over to a firm of caterers. It is essential that troop and company officers should pay constant attention to the catering if the men are to be properly fed.

Lavatories are by no means up-to-date, and the sanitary arrangements leave much to be desired. Improvements are introduced from time to time, but the damages are always heavy, because it is nobody's business to look after them. Some old pensioner should be told off to look after such places, just as we have old railway porters in attendance in the lavatories at railway stations.

One of the principal causes of annoyance to well-educated men is the drunkenness so often winked at in the barrack-room. If a man does not make trouble he is generally left alone, in many regiments at least; but the language indulged in by men in a boozy state is not admired, to say the least, by better-behaved men. The introduction of cubicles might be welcomed on this account if no other, but the expense is considerable, and there are many objections. It would seem better to put down the drunkenness with a strong hand and encourage the steady men to insist on decency and quiet, which they can generally do if they like, as they are almost always in the majority. It is the fear of getting mixed up in a row which deters them from interfering.

It is, too, open to question if the canteen in its present shape should not be abolished. If men were allowed a certain amount of beer with their meals (steps being taken to ensure proper order) and perhaps a moderate allowance in the recreation-rooms, those who wanted more could always go outside to get it, and if they got into trouble would be dealt with by the police. Such a step would be very unpopular at first, but it would do far more to make the barrack-room comfortable than any other measure which can be proposed.

It should also be made impossible for a man to come into his barrack-room in a state of drunkenness. If he chooses to make a beast of himself the man should pay the requisite penalty, and not be allowed to make himself a nuisance to other people, who endeavour to screen him because it is the proper thing to do.

B. AUXILIARY FORCES.

Militia.

As stated above, so much depends on local conditions, in the case of the Militia, that it is almost impossible to formulate any definite proposal, except that the conditions of service should be sufficiently elastic as to provide for the more ordinary contingencies which are likely to occur. If, for instance, in an agricultural district the harvest is very late, the training should be postponed on that account. Again,

it should be quite possible for a man to put in his training with another battalion if he is not able to attend the training of his own battalion. Again, in some urban districts it may be desirable to copy the plan adopted by the Volunteers, and let the recruits at all events put in some of their preliminary training in the shape of evening drills. In a word, the training must be arranged to suit the man as far as possible.

The subject of Militia recruiting, however, cannot well be considered apart from the general question of the organisation and employment of the Militia. The Militia generally claims to be a Home Defence force, but over and over again, in recent years, Militia battalions have served abroad in time of war, and the recent obligation for general service imposed on them shows that this tendency has been recognised, and the force is being adapted to its proper use. The latter appears to be to form a second, if not a first, reserve for the Regular Army. This is only as it should be, if, as the writer thinks should be done, the duty of Home Defence were entrusted to the Yeomanry and Volunteers. The latter should be properly organised in divisions and brigades, to form a separate army for Home Defence, but the Militia battalions should look to supporting their Regular battalions, and would require no separate organisation. Their proper place of training is with their Regular battalion, and if unable to join the latter, the Regular unit should join them during their training. This, however, is somewhat by the way, but it is necessary to obtain clear insight into the duties of the Militia when considering the subject of recruiting.

A further suggestion may, perhaps, be made, namely, that all enlistments should be for a short colour service with the Regular Army, followed by a turn of service in the Militia, and winding up with a service in the Second Reserve. The Militia would then become the First Reserve. If this were done, it would be possible to allow considerable freedom of transfer from Regular to Militia, and *vice versa*, after the first short period of colour service. Employment would be guaranteed to Second Reservists, but not to Militia or First Reservists, who would have the choice of re-engaging for service with the colours in the Regular battalions, or taking their chance in civil life. There seems, however, no reason to debar them from coming back to the colours at any time during their First Reserve (Militia) service, provided that they "signed on" for a considerable period, say five years.

The above is only a sketch and not an essential factor in the scheme of this essay; but the main principle, that the Militia must be either the First or Second Reserve of the Line, must be insisted on.

Such a measure would, it is thought, have a good effect on Militia recruiting, and the great influx of trained men into the ranks of the Militia would simplify the training of the force, and give it larger opportunities of usefulness.

It might be argued that all recruits should be enlisted for the Regular Army alone, and the Militia be composed entirely of reservists; but this would exclude a considerable number of lads who would be unwilling to give up their civil avocations, but yet may become useful soldiers.

Yeomanry and Volunteers.

These may well claim to be the mainstay of our forces for Home Defence, and it would appear that the time has come to organise and train them for this object. If the work of Home Defence were definitely entrusted to the Volunteer Forces, they would rise to the occasion and prove themselves fit for the task. In such circumstances the difficulty of obtaining recruits would disappear, provided that they were not asked to do anything which the claims of civil life would prevent them from undertaking.

If local conditions were more studied, and the times of training suited to the local demands of civil life, there would be little difficulty in obtaining recruits. It is only necessary to make the regulations more elastic. Too much importance is attached to the so-called necessity of training large bodies of men together. An attempt is made to teach them to run before they can walk, and the result is but little improvement. Far more progress would be made if all arrangements for training were left to the Volunteer Brigade Staff—the brigadier being responsible for, and certifying to, the efficiency of the men trained. In many cases it would be better to have a week's brigade training twice a year, either in the districts to which the corps belong, or at one of the nearest seaside places, than the annual effort to reach Aldershot or Salisbury Plain. Divisional training once in three or four years would suffice to give the brigadiers and commanding officers the requisite experience.

But, whatever plan is adopted, it is all-important to give the Volunteers certain defined duties to perform, and make them and the public realise the importance of these duties. A smart and active Volunteer officer, who knows his work, can always attract recruits to his company, and in order to keep up the supply, it is only necessary to wipe out the old reproach that Volunteers are merely playing at soldiers.

CONCLUSION.

The best, least irksome, and least costly method of securing recruits is, to offer such inducements, other than increase of pay, as will overcome their natural reluctance to submit to the yoke of discipline, and to bind themselves for so many years' military service.

These inducements may be summed up as follows:—

A. REGULAR ARMY.

1. Military service should be made so popular that the length of service can be adjusted to suit the requirements of the Army, without disturbing the recruiting market.
2. The ideal length of service is 2 or 3 years with the colours, followed by 8 or 7 years in the First Reserve, and 5 years in the Second Reserve.
3. The most important inducement to recruiting is the prospect of future employment. This must be guaranteed by a law reserving all subordinate posts in public offices for those who have served their country.

4. A large increase to the married establishment is desirable on the grounds of efficiency, as well as to attract recruits. This is the most costly of these proposals, but the cost would be compensated for by increased efficiency.
5. Furlough should be allowed more freely to well-conducted men who have served 4 or 5 years abroad.
6. Non-commissioned officers should be given several additional privileges, notably, separate quarters and more freedom.
7. The men's comfort in barracks should be studied still more than at present.
8. Dress should be suited for the purpose for which it is required. The walking-out dress should be smart and attractive, without being uncomfortable, while the service dress should be practical, without being repulsive. All non-commissioned officers should be allowed to wear plain clothes when not on duty, and all soldiers should be allowed to wear plain clothes when on leave or furlough.

The tunic of the soldier should correspond to the black coat of the artisan, and he should be allowed to wear whichever garb he preferred when out of barracks, so long as he was clean and tidy.

B. AUXILIARY FORCES.

The conditions of service must be made to suit the convenience of all those who are able to devote only a portion of their time to soldiering. If this were done, and the control of the different branches entrusted to officers of these branches, there should be no difficulty about getting recruits.

The Volunteers and Yeomanry should be made responsible for home defence, and the Militia should be recognised as the First Reserve of the Line. It might even be desirable to enlist all recruits for two or three years' colour service in the Line, followed by seven or eight years' service in the Militia, unless they re-engage for service abroad with the Line.

No attempt has been made in the above pages to lay down any accurate and definite rules, rates of pay, length of service, etc., as these must depend on circumstances, and be amended from time to time; but it is hoped that one main principle has been established, namely, to give the utmost consideration to the views and wishes of the class from which we get our recruits, and to endeavour to offer such inducements to recruiting as will appeal most strongly to them.